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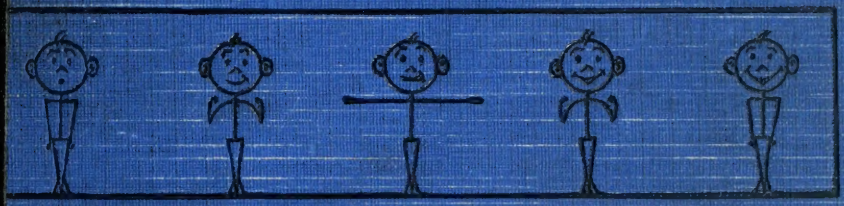

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By S. C. STALEY

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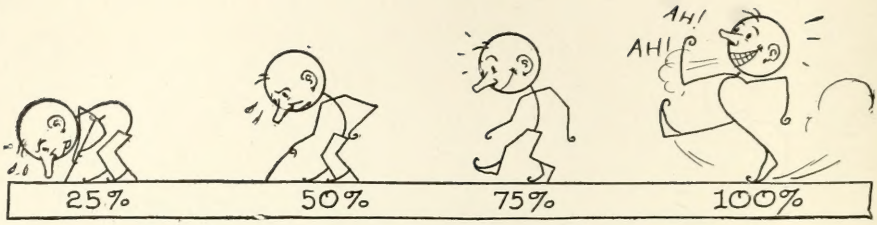

"POSTURE EXPRESSES PERSONALITY"

HEAD UP

CHEST OUT

ABDOMEN IN

EYES OFF THE GROUND AND~

FEET POINTED STRAIGHT FORWARD.

WRONG

RIGHT

CALISTHENICS

MODERN METHODS OF FREE-EXERCISE INSTRUCTION

BY

S. C. STALEY

ASSOCIATE PROFESSOR OF PHYSICAL EDUCATION
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PREFACE

While serving as Assistant Director of Athletics at Camp Gordon in 1918 it became my duty to direct and supervise the setting-up work carried on with the soldiers in camp. This experience marks my first serious interest in calisthenics. Faced with the problem of teaching calisthenics and having only a superficial knowledge of the same, it behooved me to first increase my own knowledge. With this idea in mind I began to review the literature on physical education; magazines, pamphlets and books were overhauled in generous numbers. To my surprise I found almost nothing on the subject. That which was found was dug out of general treatises on gymnastics or consisted simply of organized drills. Without the expected help from this source then I plunged ahead studying the problem as I progressed and resolving that if opportunity afforded I should later make a thorough study of this work.

My hopes in this direction were fully realized three years later when in the fall of 1921 I was afforded the opportunity of teaching calisthenics to a group of normal students at the University of Illinois. Since that time I have made this work a very constant study. The results of this study are set forth in this book.

My excuse for publication, if an excuse is necessary, is to be found in the fact that as shown by a questionnaire sent out by the University of Illinois, calisthenics is used more extensively in our national program of physical education than any other single type of work. It is used from coast to coast, north and south alike; in educational institutions from the grades through college; in social institutions (Y.M.C.A.'s, Y.W.C.A.'s, Athletic Clubs, Community Centers); on the playgrounds; and recently this work has even been introduced in commercial and manufacturing institutions. There are literally thousands of drills conducted daily with hundreds of thousands taking part. In addition there are great numbers performing a set of exercises in their own homes daily; some executing drills of their own make, some performing drills of professional construction, and still others doing drills to the tune of the phonograph and the radio.

In spite of this extensive usage, present-day calisthenics is not conducted efficiently. Bad and useless exercises are used; exercises are constructed wrong; drills are made up of too many exercises; time is wasted in a number of ways; the teaching procedures are faulty; the methods of exercising are often wrong; in a great many ways the work is very defective. It should be stated, though, that these facts are not reasonable arguments against calisthenics. All these are faults of the teacher. It is the logical product of the prevalent idea that anybody can teach calisthenics, calisthenics consists only of waving the arms about, and so on. Done properly, calisthenics offers a tremendous amount of benefit. It is with the idea of improving this teaching that the present work is published.

Particular attention is called to two sections of the book, namely, the chapter devoted to a critical analysis of representative drills and the section dealing with the "at will" method of teaching. In the chapter devoted to a critical analysis of representative drills the main faults of present-day teaching are outlined. The instructor desirous of improving his methods will find a thorough study of this part of the book particularly suggestive. The "at will" method represents a new procedure for teaching calisthenics. We have experimented with it for two years here at the University of Illinois and can report that it has given very satisfactory results. The entire teaching staff unites in endorsing it as being, in many respects, far more effective than the older methods. It is recommended to others for trial.

In closing may I state that I do not feel that the plans and procedures recommended here represent the final word on the subject. In preparing the material it was often convenient to be dogmatic rather than scholarly, so at any place where the book takes this tone may I ask the reader to remember this fact and consider the material accordingly. The book is presented with the hope that it might stimulate others to go on and find still better methods.

S. C. Staley.

May 1, 1926.

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CALISTHENICS

CHAPTER I

INTRODUCTION

According to the Century dictionary the term calisthenics refers to "the art or practice of exercising the muscles for the purpose of gaining health, strength or grace of form and movement; a kind of light gymnastics."

The word is directly traceable to an early Greek origin, coming from two words meaning beautiful strength. In a slightly different form, Calisthenees, it was a common proper name with these ancient people, but, in so far as we can find, the word was not used, as we use it to-day, in denoting a kind of gymnastic exercising. This use of the word came into being about a century ago.

History of Calisthenics

It is impossible to trace and determine all the details of the history of calisthenics, but it is possible to outline the broad lines of its usage. The practice of the activity probably goes back to the fourth or fifth century before Christ. At this early date the Greeks were employing a large staff of specialists in the development of athletes. These included directors, coaches, trainers, rubbers, and supervisors. It was the function of the trainers to condition the athletes. In the performance of this duty they directed their charges in the execution of drills with halteres. These instruments, originally designed for jumping purposes, were used as dumb-bells. While we have no exact proof, it is readily conceivable that the javelin was so used also; and when neither of these were available the exercises were done without the use of hand apparatus. In this instance the activity was used primarily for developmental or conditioning purposes.

With the appearance of Herodicus, however, we have the activity adapted to a new use, namely, medical gymnastics. Galen, commonly credited with being the leading physician in Grecian history, even went so far as to prescribe and describe exercises of the legs, arms and trunk. The haiteres, small balls, and other implements were used in the practice of this art.

The modern use of calisthenic exercises dates from about the year 1785. A gymnastic teacher, Christian Carl Andre, teaching in Salzman's school, founded the year before at Schnepfenthal, is credited with introducing the work. According to Leonard: "When the weather was unfavorable they practiced indoors various movements and positions intended to teach the proper carriage of the body—the beginnings of our modern free-exercises."

While this work undoubtedly marks the beginning of our modern program of calisthenics the literature on gymnastics for the next half century is relatively barren of reference to it. With GutsMuths, Jahn, Ling, Nachtegal, and others making large contributions, however, there can be no question but what some attention was paid to this form of exercise.

In the year 1829, Clias, a roving Swiss gymnastic teacher with experience in teaching gymnastics in Switzerland, France and England, published a book, entitled "Kallisthenie," with the sub-title, "Exercises for Beauty and Strength." This book was intended for girls and included both free exercises and exercises with hand apparatus. It marks, so far as can be determined, the first use of the term calisthenics.

It is quite probable that in the writer's mind the word gymnastics implied work on heavy or fixed apparatus. Further, that this work was designed primarily for boys and men and in consequence was not suited for use with girls and women. On the other hand, work with light or movable apparatus was adapted for use with these weaker groups. So, for the purpose of distinguishing between work for boys and men and work for girls and women he introduced the new term to cover the type of work primarily designed for the latter group. As the word gymnastics had come from the Greek, the new term must come from the same source. The term Kallisthenie, meaning beautiful strength, was admirably suited to the purpose. This hypothesis is substantiated by the fact that shortly after this we have calisthenics appearing in a number of the girls' schools in this country. Instead of gymnasiums these institutions constructed calisthenic halls.

Shortly after the appearance of Clias' book on calisthenics, a German by the name of Spiess, teaching in the schools in Switzerland, also experimented with the use of light gymnastics with girls. He developed an ardent enthusiasm for the practice and subse-

quently became a dominant factor in the introduction of this work throughout Europe. Spiess did not use the term calisthenics, however, preferring the title, "Girls' Gymnastics," although the work was essentially the same as that used by Clias.

In the meantime, Per Hendrick Ling, a Swede, had set up the crude outlines of a new system of gymnastics which included, along with exercises on the apparatus, a number of exercises without apparatus. These latter exercises, for purposes of distinction, were called free-standing exercises.

Then in 1860, Dio Lewis, an American promoter of considerable ability, steps into the picture. Through his power of oratory and personal charm he succeeded in having introduced in a great number of American schools what he was pleased to call, "New Gymnastics." For a time he pretended that the activities used were new and original, but it has been found since that most of his material was filched from the light gymnastic program of the Germans, and was not essentially different from the calisthenics used earlier. His "new gymnastics" included free exercises, dumbbell exercises, ball exercises, Indian club exercises, dancing steps, wand exercises, and reed exercises.

In the meantime the German system of gymnastics was undergoing some changes and was finally shaped to include both the light gymnastics of Spiess and the heavy gymnastics of Jahn. This combined program was advocated for use with both sexes.

From the close of the Civil War until the beginning of the twentieth century it can be stated that the German system of gymnastics dominated the physical education program in this country. Thus light gymnastics, including free exercises and exercises with hand apparatus, were used considerably. During this period, due to the influence of Dio Lewis and the widespread usage of German terminology, the term calisthenics practically disappeared.

The opening years of the twentieth century marks the beginning of another powerful movement in the history of physical education. The athletic and play movement was developing rapidly. This resulted in a very perceptible decrease of interest in German gymnastics. During this period of decline in German gymnastics the program in light gymnastics was the heaviest sufferer. Exercises with hand apparatus almost went out of existence. Free-

exercising, however, continued to thrive as formerly, but for some mysterious reason took unto itself the title, "Calisthenics." So to-day the term is used, to connote exercising without the use of equipment.

Thus, in summary it can be said that exercising without the use of equipment has a history closely paralleling the history of gymnastics. Further, that the term calisthenics came into use at the beginning of the second quarter of the nineteenth century, and that during that period covered what was later called light gymnastics—free exercising and exercising with movable apparatus. And finally, the term calisthenics has come to import free-exercising, while light gymnastics has been reserved to signify exercising with hand apparatus.

Formal and Informal Work

During the last decade or two there has been a great deal of wrangling among educational theorists as to the relative merits of what they are pleased to call formal and informal methods of teaching. These two terms have been variously defined, but for all practical purposes the first may be considered as an artificial teaching procedure in which the teacher dominates the pupil and prescribes the performance of carefully detailed exercises, and the second may be considered as a natural teaching procedure in which the teacher merely helps and guides the pupil in activities predominately interesting to the pupil himself.

This problem, encompassing as it does the entire field of education, has reached, of course, the program in physical education. In this field instead of centering in the method it has centered, rather, around the matter of content—what activities should be included in the program. On the one hand we have the informalists arguing that natural playlike activities should constitute the whole of the program, and on the other hand we have the formalists arguing that artificial exercises should constitute the whole of the program. And then, of course, we have those who argue for all kinds of combinations of the two.

It is a curious fact in the history of social and educational movements that once a group has made up its mind that a certain condition is a little deficient or defective it takes but little more thinking to convince those concerned that it is all bad, all wrong.

Thus the pendulum tends to swing from one extreme to the other.

This seems to be precisely the case with regard to the program in physical education. The program in gymnastics fathered by GutsMuths and Jahn, which marks the real beginning of modern physical education, was essentially natural and informal. Spiess, their successor, through his efforts to harness the program of activities to the best educational precepts and practices of his time broke up the stunts into exercises and thus partially formalized the work. In this revised form the German system of gymnastics was introduced and exploited in this country. This occurred in and about the year 1850.

In the meantime the Swedish system of gymnastics, devised by Ling in 1814, was gaining considerable headway. This system, designed as it was around the corrective and remedial aspects of exercising, was wholly artificial. Natural activities were expressly eliminated. Between the years 1850 and 1900 the system was introduced and adopted for varying periods of time in practically every country in Europe. Starting about 1885 a number of exponents of the system campaigned for its introduction and adoption here. This immediately resulted in a howl of protest from the German school, which was by this time firmly entrenched. For the next two decades the chief topic of discussion in physical educational circles centered in the relative merits of German and Swedish gymnastics, the first of which was only semi-formal and the second of which was wholly formal. On the whole, though, the discussion resulted in a further formalization of the work.

During all this time the extended use of gymnastics in military training only tended to further fixate the formalized procedure. Thus consolidated, the formal method dominated the physical education program in this country for more than half a century.

Then with the spread of the play movement, which, while it started earlier, had its really significant expansion in the early years of the present century, we have the introduction of a new program, new theories, new activities. The upshot of the whole situation is that there is now a strong tendency to revert to the natural play-like program, similar, in essence, to that fostered by the early pioneers; the only difference being that in the early program interest centered in acrobatic stunts while in the new program interest centers in athletic games.

In the final analysis this debate over the relative merits of formal and informal work, or German and Swedish gymnastics, or natural and artificial activities, or play and exercise, is in reality a debate over the value of subjective and objective types of activity. Without going into lengthy detail it seems to the writer that, after all, there is no grounds for debate. The two types of activity are aimed at different ends, interrelated it is true, but still substantially distinct. Through our program of objective activities we aim to develop the individual's natural endowments; through our program of subjective activities we aim to mold the body so it can utilize these natural endowments most advantageously. Both of these objectives are important and preëminently worth while; both subjective and objective activities should be used in our program of physical education.

Types of Formal Work to be Used

Having presented the thesis that some formal work should be included in our program of physical education activities, the next problem which faces us is the determination of the type of work which should be used. The program of formal activities is normally considered as consisting of four distinct types of activity, namely, calisthenics, marching, exercises with apparatus, and exercises on apparatus. The first consists of exercises done in the standing or reclining positions without the aid of accessory equipment; the second consists of walking maneuvers; the third consists of exercises done in the standing or reclining positions with the handling of accessory equipment; and the fourth consists of exercises done with the aid of fixed apparatus.

Which of these four types should be used? Experience and study seems to favor the use of the first two—calisthenics and marching—and exclude, at least considerably limit, the use of the last two—exercises with and on apparatus. Calisthenics are included on the grounds that they provide us with practically all that is desirable in the way of developing organic power, posture, body control and suppleness. Besides, they are relatively simple to teach, learn, organize, and supervise. Marching is included because of the training afforded in proper walking. In addition it is an invaluable asset in class management, posture training and response to vested leadership.

Exercises with apparatus include the use of the following kinds of equipment; dumb-bells, wands, Indian clubs, flags, reeds, rings, ropes, bean bags, balls, medicine balls, pulley weights, elastic exercises, rifles, weights and punching bags. Of these, dumb-bells, wands, flags, reeds and rifles have nothing to offer that cannot be secured through calisthenics. Drills with these implements are nothing more than calisthenic drills with apparatus in the hands. Frequently they hamper performances so that only restricted results can be obtained. If this is true, why should we invest money and time in equipment and work that has nothing special to offer? The balance of the equipment is useful for individual exercising, but cannot be satisfactorily used for class work. Frequently this material is used for play and recreational purposes; when this occurs, though, the activity joins the category of informal activity and thus automatically excludes itself from consideration here.

Exercises on apparatus includes work on the parallel bars, stall bars, boom, balance rail, horizontal bar, side horse, long horse, buck, spring board, traveling rings, flying rings, climbing rope, climbing pole, horizontal ladder, inverted parallels, trapeze, inclined ladder, inclined rope, inclined poles, vaulting box, giant stride, swing, seesaw, rowing machine, climbing tower and climbing wall. A clear distinction is made between doing exercises on this apparatus and performing acrobatic stunts on it. In the first instance the effect of the exercise on the body is the dominating factor; in the second instance the stunt, or trick, totally regardless of the effect on the body, is the dominating factor. In the first instance the exercise is considered as subjective; in the second instance it is considered objective. Frequently the distinction is reduced to hair-line thinness, it is true, but nevertheless it is made.

The question arises, however, why should apparatus exercises be excluded from the program? The answers may be summarized in the statement that they have nothing special to offer, nothing that cannot be more advantageously secured in other ways. The hanging and supporting work can be equally as well secured through the performance of stunts. The postural, body control, suppleness and hygienic effects can be equally as well secured through calisthenics. Besides, stunts make a much greater appeal than exercises to the average individual; and calisthenic exercises are much easier to teach and control than apparatus exercises.

If these statements are true, and experience clearly indicates that they are, there seems to be no logical reason for the use of exercises.

Time Factors

Accepting the thesis, then, that some formal activity should be included, the question arises as to the proportionate amount of time that should be awarded to it. Here is real material for debate. There are no scientific grounds for arriving at a solution; the final decision can be based only on a careful analysis and comparison of the many factors involved. So, after all, it becomes primarily a matter of experience and judgment. However, for the purpose of making my own position clear, it seems desirable to make a definite statement on the matter.

Informal work should constitute the bulk of the program. Formal work should be used principally when the classes are forced inside because of bad weather. In this country this usually means occasionally in the fall, practically all winter, and occasionally in the spring. In no case should it be used in excess of half the school period, and in most cases from one-quarter to one-third should be ample. Under varying conditions from ten to twenty minutes is all that should be allotted to it.

How should this time be distributed between calisthenics and marching? It is exceedingly difficult to make a reliable statement as to the exact proportion, but I presume it should be attempted. Of the whole time devoted to formal work one-tenth for marching and nine-tenths for calisthenics, perhaps, is as close as it can be estimated. The whole point is that the greater share of the time should be devoted to calisthenics. Calisthenics should be used practically every day that the class works inside while marching should be used only occasionally.

When should the formal work be introduced in the period; at the beginning, in the middle, or at the end? Practical experience and logical reasoning both indicate that it is best to insert it at the beginning. Introduced here it serves to build up class morale, attention, and discipline; this facilitates the organization and conduct of the balance of the work. Besides, this arrangement places the exercises at the beginning of the period and leaves the play for the latter part of the period. This is far more desirable than a plan in which this order is reversed.

CHAPTER II

THE PURPOSE AND FUNCTION OF CALISTHENICS

Calisthenics is performed for the purpose of attaining four recognized objectives. While these are variously conceived and variously stated by specialists in this field they may be, for our present purpose, briefly stated as follows:

1. The development and maintenance of body health.
2. The development and maintenance of good body mechanics.
3. The development and maintenance of body suppleness.
4. The development and maintenance of body control.

While under careful analysis these objectives are somewhat interrelated they are separate and distinct enough for individual consideration and discussion.

I. BODY HEALTH

Biologically, man's present physical mechanism of bones, muscles, nerves, vital organs, etc., is the product of infinite ages of adaptation. It represents a natural inherited endowment which we could not rid ourselves of if we wanted to. Kept in a healthy condition, it provides us with the chief source of happiness and efficiency; allowed to degenerate, it furnishes us with the chief source of misery and inefficiency.

(a) Exercise Primary Source of Health

The primary source of body health is exercise. The whole organism is a direct product of muscular activity and remains today, in all its parts, intimately linked up with the muscular mechanism. Muscular movement is the principal factor in the development and maintenance of what is variously called vigor, vitality and power. Through exercise the circulatory system, digestive system, eliminatory system, respiratory system, and metabolism in general, are stimulated into action and subsequently into a state of organic health. Through lack of exercise the various organs

tied up with these systems decay. This is an unchanging law of nature. The condition referred to above, vigor, vitality or power, is directly related to the condition of this vital apparatus.

(b) Modern Conditions

Prior to the present mechanical age, when agricultural and craftsmanship activities represented the main sources of securing a living, the average man, woman and child secured sufficient exercise through daily labor to maintain the organism in a healthy state. In the present age, however, due to the existence of numerous mechanical inventions, specialized labor, and so on, the average individual does not secure this needed exercise through his normal labors. The great majority of people in modern cities ordinarily do nothing more violent than "that occasioned in walking to a car, clinging to a strap, reading a newspaper, sitting at a desk and dictating letters, and the like." Even the farmers, miners and others engaged in pursuits that are commonly associated with laborious activity are, by virtue of the inventions of labor-saving devices, being relieved of large units of muscular activity. The securement of this exercise represents a new and modern problem of humanity. If this exercise is not gotten through the normal means of labor it must be taken deliberately or racial decay will result.

(c) Organic Results Product of All Muscular Efforts

Every muscular effort in some measure produces organic results. Swinging the arms, tossing the head, even so simple an act as rolling out of bed, effects some degree of organic stimulation. Every muscular contraction has a metabolic effect—food is demanded and waste must be carried off, thereby stimulating the circulation. In addition the mere act of contraction has the effect of mechanically forcing blood through the veins. To maintain the proper chemical balance in the blood stream the respiratory rate is increased. Thus every muscular effort results in organic stimulation in direct proportion to the quantity of work performed.

(d) Work Should be Vigorous

To secure the desired hygienic results, however, the organic stimulation should be powerful and regular. This calls for con-

tinued, vigorous exercising, sufficient at least to produce lively metabolism. The whole organism should be roused. The heart rate should be increased, arterial pressure raised, venous and lymph stasis, especially in the central cavities, released, the skin flushed, the sweat glands activated, and all the abdominal organs, including the liver, intestines, kidneys, and internal glands, vigorously stimulated. The frequent and regular repetition of such exercise is bound to increase the functional efficiency of all the organs, to favor all the processes which make for health and its concomitants, vim, zest and energy.

(e) Principles to be Followed in Calisthenics

While these results may be secured through many sorts of exercise the dosage and distribution of work may be more efficiently governed and controlled through calisthenics, perhaps, than any other particular type. In formulating lessons for the purpose of attaining this particular objective, however, there are certain specific principles which should be followed.

1. *Big Muscle Areas.* The large muscle areas should be exercised in preference to the smaller muscle areas. Specifically, trunk and leg movements should constitute the bulk of the work. Not only is the trunk surrounded by great muscle masses, which upon being exercised produce large metabolic effects, but the bending and twisting of this region produces large mechanical effects on the internal organs that are highly contributive to health. Movement of the trunk, through massaging, jarring and squeezing the abdominal and thoracic contents, stimulates the organs into healthy activity. In the same way bending and twisting the spinal column has an excellent stimulating effect on the spinal cord and the nerves and ganglia contingent to the same. The legs hold some of the largest muscle groups in the body and by exercising these we again get powerful metabolic reactions.

2. *Repetition.* Each exercise should be repeated until definite organic and muscular results are felt. The number of times varies of course with the scope of the exercise, but it can be gauged by the condition of the exercisers. By repeating a particular exercise the physiologic results tend to pile up; by changing the exercise constantly this does not occur. Exercises conducted for hygienic purposes thus are best repeated with reasonable frequency.

3. *Rhythm.* The exercises should be carried on rhythmically. The alternate contraction and relaxation of the muscle groups aid circulation, respiration, digestion and the other vital processes. Physiologically, this is the most satisfactory method of exercising.

4. *Large Movements.* The movements should be large and executed with normal speed. Carried on slowly the organism is afforded the opportunity to adjust itself and the organic results do not develop. Carried on rapidly, the nerve strain is increased, thus reducing the value of the work. To get the best results the normal, natural rate should be maintained.

II. GOOD BODY MECHANICS

This aspect of physical education is more generally known as posture. In view of the fact that posture usually refers to the trunk and head alone, and body mechanics refers to the entire body the latter term is given preference in the present text.

(a) Common Tendency Toward Bad Body Mechanics

Due to a variety of causes the human organism has distinct tendencies to assume bad postural attitudes. Crampton, in his recent book on "The Pedagogy of Physical Training," has summarized these causes as follows:

1. *"Causes of Bad Posture.* Bad posture is usually due to a combination of causes; *i.e.,* hereditary maladjustment, the influence of gravity, and lack of vitality or tone.

The erect position is biologically a recent one, and in the change from a horizontal to a vertical position, the harmonious relationship of the various body parts is destroyed; hence the mechanism for the support of these parts is relatively weak and is easily wearied by gravity. All these maladjustments of body parts are primarily ptoses, and are due to the continual action of gravity upon the body thus placed at a disadvantage. The upright position is more expensive in vital energy, and therefore all the body parts tend to sag. Ptosis is normally overcome by good muscular tone.

2. *"Definition of Ptosis.* Ptosis is a downward displacement or depression of the various body parts. It is found in the drooping of the head, shoulders and ribs; frequently in the depression of the stomach, intestines, and other abdominal organs; in forward,

backward, and lateral curvatures of the spine. Any of these gives the body an appearance of sagging downward. There are four kinds of ptoses: skeletal, visceral, circulatory, and emotional. They are more often found associated than singly. Each symptom evidences a condition which is the result of low vitality and which in turn tends to cause low vitality, thereby establishing a vicious circle.

3. *"Skeletal Ptosis.* Skeletal ptosis is the downward displacement of bones, and is shown in the drooping of the head, the exaggeration of the normal curves of the spine, the falling in and down of the chest. These cause a decrease in standing height as compared with horizontal length, a comparison which is a definite test of poor skeletal posture of the flexible (but not the static) type. Skeletal ptosis is caused by weak tone, by the relaxation or chronic weariness of the muscles which hold the body erect. It is a natural adjustment of the body to fatigue.

4. *"Visceral Ptosis.* Visceral ptosis is the downward displacement of the internal organs, and is usually accompanied by skeletal ptosis. It may be local; that is, one organ only may be displaced; or general, in which case the whole body contents sag downward. In the latter case the chest is flattened, its capacity is decreased, and the abdomen becomes protuberant, the lower ribs often bulging. It is the result of constitutional inferiority, low vitality, or bad habit. Its presence may be ascertained by percussion of the organs to determine their position, by the use of the X-ray, and by comparing the girth of the chest and the abdomen.

5. *"Circulatory Ptosis.* Circulatory ptosis is the downward displacement of the blood and its collection in the abdominal veins and arteries. The splanchnic veins in the abdomen form the most capacious system of blood-vessels in the body, and if they are relaxed and distended, a large amount of blood which should be in other parts of the body drains into them. In the erect position, these vessels continually work against the force of gravity. They are kept from distention by the contraction and tone of the muscles in their walls, which are under sympathetic nervous control, and by the contraction and tone of the walls of the abdomen. If there is an insufficiency of nervous control or if the abdominal wall is weak, permitting relaxation, the resistance to the pressure of gravity is lessened and ptosis results.

6. *"Emotional Ptosis.* This is a depression of the spirits. The terms dejected, depressed and downcast are all derived from descriptions of physical states that by racially old practice and habits have become applied to emotional states and refer to unpleasant feeling of the asthenic type. Additional more or less coloquial terms are down-hearted and down-in-the-mouth. These terms, descriptive of emotional ptosis and derived from physical states, indicate the correlation between the mental and the physical.

7. *"Correlation of Ptosis.* All four ptoses as a rule occur together. Any one tends to cause the others, but the relation of ptosis to each other is not so greatly that of cause and effect as it is that of the effects of a common cause; to wit, lowered vitality. Ptoses are likely to occur after illness, a period of loss of sleep, chronic digestive disturbances, and the like. Therefore, ptoses are not to be removed permanently without the removal of the common cause; *i.e.,* lowered vitality, the very term in itself expressing a ptosis. There are, however, various other influences and substances which bear upon the case."

8. *Daily Activities.* There is another prominent cause for bad posture which Crampton does not include in his list, namely, the influence of normal daily activity—manual labor, sitting, playing, and so on. In our daily occupational activities we continually reach forward, thrust the head forward and in other ways tend to accentuate the evil influences of our inherited maladjustments and the force of gravity. In many cases, of which miners, ice handlers, draymen, mechanics, and carpenters are illustrations, the effects of these activities are very pronounced.

(b) Significance of Good Body Mechanics

Good body mechanics has been advocated and striven for since the very beginning of the science of physical training, but it is only in the past few years that its tremendous significance has been clearly seen. The benefits associated with this may be summarized under seven distinct headings: physical, physiological, psychological, educational, economic, social, and esthetic.

1. *Physical.* Good body mechanics presupposes that the various parts of the body are held in their proper positions, and that they are held in these positions by muscles in an active tonic condition. In these positions the various parts (the arms, legs and

trunk) are best situated for all-around control and management. Skeletal positions which are bad posturally undeniably facilitate action in certain specific activities, but these positions, if permanent, markedly interfere with other activities. Good posture, unquestionably, is more conducive to all-around motor efficiency.

2. *Physiological.* Recent studies in body mechanics have revealed an extraordinary close relationship between posture and organic health. Dr. Goldthwait, of Boston, perhaps our leading authority in this field, asserts that there is a direct relationship (with certain self-evident reservations) between body mechanics and organic health. In the well poised body with chest and abdomen up the organs are held in positions best suited to the proper performance of their functions. The lungs have more room for expansion; the heart and stomach are not cramped. The liver, kidneys and other organs in the abdominal region are given more room to function properly. Abnormal pressure on the organs of the pelvic region is also removed. Circulation, respiration, digestion, assimilation, elimination and glandular secretion, all the processes so vital to health, are facilitated. Ptosis, autointoxication, constipation, indigestion, menstrual difficulties, breathlessness, and other physical ailments too numerous to mention, if not completely avoided, are at least partially forestalled.

3. *Psychological.* The physical aspect of posture is quite commonly recognized and understood; its psychic aspect, however, is not so widely appreciated. A direct correlation seems to exist between physical attitude and mental attitude. The individual who stands erect throws his chest out and holds his head high feels himself to be more of a man than when he slumps. He has more courage, more sureness, more self-confidence; he can look another in the eye more easily. The mere act of straightening up causes this frame of mind to steal over one. The term "Brace-up," calling for a straightening of the body with the added implication that the mind thereby will be cleared, illustrates the point in question.

4. *Educational.* Further, it has been established by statistical tests that physical or mental weakness is in general accompanied by poor posture. The average record of pupils in the poor posture group has been found to be appreciably lower than the good posture group, in attendance, in deportment, in physical activity and endurance, in manual training, and in commercial success after leaving

school. It is clear that anything that lowers vitality causes bad posture. To what extent bad posture causes poor vitality is not accurately known. It is certain that by assuming good posture, raising the chest and head, one feels better. This is partly psychological and partly due to an actual improvement in the circulation of the blood.

5. *Social.* Emerson's statement, "What you are speaks so loudly that I cannot hear what you say," epitomizes the social significance of body carriage. The strong upright male makes a far greater appeal to the opposite sex than does his sagging, slouching brother. An upright bearing without doubt raises one a step or two in the social scale of any community. A high-held head is the essence of leadership. Can you imagine how keen soldiers would be to follow hollow-chested, duck-footed officers. A strong erect posture, to the world at large, expresses strength of will, alertness, poise and the ability to lead; it is behind such men that the world falls in step.

6. *Economic.* The economic value of good posture is unquestioned. In the class room, business office or drawing room the man who carries himself well is bound to get more attention than he who does not. Whether interviewing a prospective employer or a prospective purchaser or client an upright bearing is a primary asset. Did you ever see a weak-chested, round-shouldered traveling salesman who was pronouncedly successful? A traveling salesman has to command attention and respect, he has to make a good first impression. A good bearing is the chief entering card of many salesmen. A stooped, anemic lawyer does not make much impression on a jury no matter how logical his arguments are. A strong, upright, alert minister attracts a larger congregation than the opposite type. Miss McKinstrie in her investigations among business women in New York finds that there is a direct relationship between posture and success. Upright posture positively increases one's earning power.

7. *Esthetic.* Lastly, upright carriage is more beautiful than the debutant slouch. This is true in spite of the fact that popular fads indicate the contrary. Common observation as well as art attests to this. If good posture is not more artistic, more beautiful, why do sculptors and artists carve and paint figures as they do? We involuntarily pay tribute to the esthetic aspect of posture

when we say "How well that person carries himself." A slouchy awkward gait does not rouse our admiration. We all instinctively admire good posture.

(c) Three Factors Producing Good Body Mechanics

Nothing can be done to remove the disharmonies mentioned above, but a great deal can be done to counteract and resist their influence. The process of counteracting and resisting these conditions, from the standpoint of physical education, may be divided into three separate fields: (1) setting up an ideal of upright carriage in the mind of the individual; (2) developing and maintaining all-around muscular tone; (3) stretching the muscles immediately involved in bad posture and shortening the muscles immediately involved in good posture. The first of these constitutes a problem of general education and can be properly secured only when the whole educational and social force turns its attention to it. The last two are definitely problems of directed physical activity.

1. *Ideal.* The most important factor in developing good posture without question is the creation of an ideal of good posture. The individual must want good posture, he must definitely set up the standard of good posture. Without this attitude of mind the constant performance of all the good postural exercises known will only be partially effective. The question rises, how can this ideal be established? It is largely a matter of promotion, education and example. Posture campaigns, posters, lectures, discussions, personal interviews, diagrams and personal example, all may be used to contribute to the desired objective. The department of physical education should aim to develop a school "frame of mind" that favors good posture and frowns on bad posture. Once this has been accomplished the cause will carry forward largely on its own momentum.

2. *Good Muscle Tone.* The body is held in its erect position by muscles which hold the ligaments and bones in position. Likewise the various internal organs are held in position by various muscle groups. Therefore, if the muscles, skeletal and torsal alike, are in a tonic condition the body will be held in a more or less upright position and health and vitality will tend to prevail. A varied program of vigorous athletic activities, gymnastics, calis-

thenics, or manual labor will do a great deal toward securing this condition.

3. *Strengthen Under-Developed Muscles.* To counteract the specific tendencies of gravity, daily work and play, in addition to maintaining the muscles in a good tonic condition, it is necessary to stretch certain muscular groups and strengthen certain other groups. All forms of exercise, athletics, aquatics, and manual labor alike develop and strengthen the body, but as previously pointed out, they do this in special limited ways. Calisthenics, on the other hand, have a special significance here because they may be designed to meet the individual's needs—we can mold the body to suit our tastes. This is one specific advantage that calisthenics has over all other general types of exercise.

(d) Body Conditions to be Striven For

If the muscles of the body are in a healthy tonic condition and both anterior and posterior muscles are about equally developed the various parts will rest more or less in equilibrium and good posture normally results. It so happens, though, that in the great majority of cases, as a direct result of our play and work activities we do not have this ideal situation; there is usually an under-development of certain muscle groups and an over-development of certain antagonistic groups. Thus the problem of creating good body mechanics, in so far as calisthenics are concerned, consist of stretching the over-developed groups and shortening and strengthening the under-developed groups.

The question immediately arises: What are the particular regions needing especial attention? To secure and maintain good posture there are seven body conditions which must be constantly striven for, namely, (1) high head, (2) high chest, (3) retracted shoulders, (4) flat abdomen, (5) flat back, (6) upward tilted pelvis, and (7) feet directed to the front. There are several minor details, such as retracted chin, level shoulders, and so forth, but the seven mentioned, if well developed, will be largely effective in producing the desired results. The relative importance of these factors may vary somewhat, but all are so interrelated that it is impossible to pick out one or two of supreme importance. Suffice it to say that all are contributory and essential.

1. *High Head.* Raising the head so it rests in balance on the

spinal column has the effect of increasing height, lifting the eyes off the ground, lifting the chest and abdomen and straightening the back. This act, perhaps more than any other one specific thing, has a tremendous effect on individual appearance. To secure this result through calisthenics, exercises which involve pressing the head backward, turning the head and pressing it backward and tilting the head backward should be used.

2. *High Chest.* Lifting the chest into a nice arch expands the chest wall and thus provides more room for the various thoracic organs: the lungs, heart, and stomach. It also makes room for the various abdominal organs, tending to draw them upward. By this means the various physiologic acts function with increased efficiency. Exercises designed to accomplish this end consist mainly of lifting the chest and drawing up on the abdomen.

3. *Retracted Shoulders.* Drawing the shoulders back from the usual forward hanging position has the effect of taking the weight of the shoulder girdle off the chest, thereby allowing that region to assume its natural position more readily. With the shoulders drawn back the center of gravity is also brought backward, thus making the upright position less wasteful nervously. Placing the arms sideward and upward and placing the hands at the waist, neck and shoulders represent types of exercises effective in securing this result.

4. *Flat Abdomen.* The abdomen is surrounded on all sides by a muscular wall, on the bottom by the pelvis and on top by other semi-fluid organs. If the muscular wall is weak the organs tend to heap down on the pelvis and spill over the sides, pushing out the abdominal walls. The abdominal organs crumpled together in this way function very inefficiently. The pelvis tends to tip forward and down, placing the sacro-iliac joint at an unfavorable angle. By developing strong muscles about the abdomen this is partially avoided. In calisthenics, lying on the back and lifting the legs or trunk, or exercises done in the seat, on floor and various support positions are effective toward achieving this end.

5. *Flat Back.* The term flat back should not be taken too literally. It is merely a trade term used in connection with reducing the frequently exaggerated spinal curves. Straightening out these curves adds to the height, adjusts the center of gravity and raises the ribs, thus enlarging the chest. Stretching exercises, neck-

pressing exercises, abdominal exercises, arm placing exercises, trunk lowering exercises, and trunk forward-bending exercises all tend to produce the desired effect.

6. *Upward Tilted Pelvis.* In the normal standing position, due to a bad skeletal disharmony, the pelvis tends to tilt forward and downward. This position has the effect of augmenting conditions posturally faulty. The abdominal content are spilled forward, the sacro-iliac and sacro-lumbar joints are strained, and the body in general is thrown out of its erect alignment. To avoid this condition the abdominal and gluteal muscles must be trained in a shortened position continuously tonic. In the beginning the exercises must apply considerable conscious effort to securing and holding this position, but after a prolonged period of practice it can be maintained without conscious attention. Some orthopedists are of the opinion that the securement of the proper pelvic tilt is the key to the whole problem of good posture. Certain pelvic exercises (explained in a later chapter), designed particularly to tilt the pelvis to the desired angle, undoubtedly are the best for improving this condition. All other exercises, primarily postural in their effects, are also helpful in securing the desired results here.

7. *Feet Pointed Straight Forward.* The natural and proper position of the feet is with the toes pointed straight to the front. Mechanically this is the most efficient position for standing, walking and running. Due to the use of faultily constructed shoes, pavements, and an old erroneous conception as to the correct angle of the feet, the common position of the feet is pointed outward. To overcome this tendency exercises of rising on the toes and turning in the toes should be used. In addition the feet should be held in the forward pointed position during the performance of the calisthenic work.

(e) Static Method of Exercising Best

Physical exercise may be classified according to the type of work performed. By this classification there are two distinct methods of exercising—static and kinetic. In the first, emphasis is placed on holding positions; in the second, emphasis is placed on movement. It is a law of nature that things tend to assume the position in which they are held. "The tree grows as the twig is bent." It is also a maxim of physiology that "muscles tend to assume their

working positions." In the face of this fact and further in the face of the fact that our problem, in so far as training desirable positions of the body parts is concerned, consists of strengthening certain muscle groups and stretching others, it seems to be quite clear that for the attainment of these results the static method of exercising is best.

III. BODY SUPPLENESS

The movements of daily play and work are normally not as large as the muscles could produce or the joints allow. Most of our activity is carried on through the central half of contracting and extending sections of the possible arcs of movement. As this process goes on the ability to fully flex and fully extend is gradually lost; in other words, the span of possibility of movement becomes reduced; the mobility of the joint becomes restricted. This is a direct product of the principle of adaptation—living structure develops with use and decays with disuse. Muscles, bones and ligaments all accommodate themselves to the daily tasks.

(a) Examples of Stiffness

Everywhere we look we discover examples of the fact that normal activity diminishes the range of movement, or, to put it a little differently, produces stiffness. The average carpenter, through continued use of the hand in the flexed position, has lost the ability to straighten his fingers. The plumber, tinsmith, and other craftsmen have lost this ability in the same way. The gardener through years of continued working with the arms forward and back arched has lost the ability to stand fully upright. The man who sits at a desk year in and year out loses a great share of his normal, inherited mobility. These conditions are bound to develop unless there is vigorous and continued effect made to counteract them.

(b) Value of Suppleness

The advantages of suppleness over stiffness are unquestioned. The individual with limber, free-moving joints is naturally graceful; the individual with stiff joints is awkward. The individual with stiff joints may be graceful and efficient within the range of his daily activity, but as soon as he proceeds outside of the range of this daily activity his awkwardness becomes evident. Supple

joints and a flexible body also make for physical efficiency. The individual who has these qualities can handle himself more precisely and effectively and with less waste of energy than the individual who does not. The individual with a stiff back has a restricted sense of balance and a decreased thoracic flexibility, thus a reduced thoracic accommodation for heightened organic reaction. Likewise, the stiff, unbendable individual has only a limited range of self-expression; the limber individual is not so handicapped.

(c) Process of Reducing Stiffness

The process of reducing stiffness involves two factors: (1) exercising the unused portions of the areas of movement, and (2) exercising the muscle groups antagonistic to those which are over-developed. By these procedures the over-developed muscles are stretched and the under-developed muscles strengthened; the bones, tendons, and ligaments are forced into their old natural flexible state.

1. *Athletics and Acrobatics.* Athletic and acrobatic activities, if vigorous and varied enough, are effective in producing a fair condition of body suppleness, but like labor the work required for these activities is purely objective and confined to the usual middle section of the joint movement arcs. In view of this limitation they may be considered as contributive to the development of limberness, but not as totally effective.

2. *Calisthenics.* Calisthenics, on the other hand, owing to the fact that we may choose our exercises and determine their range and form, is peculiarly adapted to producing this all-around supple condition. Our lesson plan can be formed to meet individual and group needs.

(d) Developing Suppleness by Calisthenics

In shaping up lessons plans to meet the common needs we must concentrate on two things: (1) we should emphasize flexing and extending the various joints to their full capacities, and (2) we should lay especial emphasis on stretching over-developed muscle groups and strengthening under-developed muscle groups. A lesson plan which covers all of the fundamental muscle groups but which lays especial emphasis on the under-developed groups (primarily the extensors) will accomplish this.

IV. BODY CONTROL

By body control we mean the ability to handle the body efficiently, or, to put it a little differently, the ability to enervate the proper muscles, at the proper time, with the proper amount of speed and effort in the execution of a given physical act. Individuals differ greatly in this capacity. Some are clever, accurate, and graceful and others are slow, clumsy, and awkward. The first are motor experts, the latter are motor dullards. The development of body control or skill and efficiency of physical action is recognized as one of the major objectives in physical education.

(a) Factors Involved in Body Control

The development of body control involves the exercising and development of certain mento-motor functions, principal of which are the following: accuracy, alertness, inhibition, speed and economy.

1. *Accuracy.* Accuracy involves two factors, exactness of position and time, or, to put it more specifically, the ability to place the body or parts of it in a given position at a given time. The securement of accuracy involves right visual and auditory judgment, but it also involves, and perhaps more important, kinesthetic judgment; the performer must "feel" the movements and positions. This faculty is highly essential to the successful performance of all physical acts. It is the product of physical education and can be secured only through repeated, constant practice of the particular act desired.

2. *Alertness.* Alertness is a state of mind and body prepared for immediate action. In its mental phase it is based upon attention or sensory receptiveness, the mind and senses are open. In its motor phase it is the preadjustment of the body for an emergency —a tightening of the muscles, a getting ready of all the parts of the body that are to join in a movement. It is indicated by the individual's speed of recreation in given situations. The impulse may come in through any of the senses—visual, auditory, etc.— and the rapidity of reaction shows the efficiency of the sensory-response hook-up.

3. *Inhibition.* Inhibition is the ability to withhold from action until the proper time for action has arrived. In our physical activi-

ties this quality has to be exercised constantly. It is of paramount importance in the matter of body control. Without well-developed powers of inhibition, skill in work and play is practically impossible; with well-developed powers of inhibition, skill is attainable.

4. *Speed.* Speed is the ability to make physical movements with rapidity. This quality is tied up with alertness and reaction and is an essential quality to supreme success in all activities requiring physical action. There is considerable individual difference in the power to develop this quality, but it can be developed to a surprising degree in every one where a conscientious effort is made.

5. *Economy of Effort.* Economy of effort consists of the ability to make just the amount of effort required to do a specific act and no more. Success in this consists of innervating the particular muscle groups involved in the performance of an act and not calling into action muscles which are not involved. This ability is sometimes called localized motor control. Grace in movement usually indicates that this quality has been acquired; awkwardness usually indicates its absence.

(b) Body Control in Soldier Training

The full significance of body control is not recognized until one has witnessed the transformation which takes place in an individual or group of individuals in process of development. In the training camps during the recent war the value of this ability was very apparent. It was amazing to note the change which took place in the personnel of the various outfits in just a few weeks. The majority of recruits reported to camp slow of foot, sluggish in comprehension, tardy in response, clumsy in movement, and in other ways fine examples of the absence of body control. A month of drill, made up principally of marching, rifle handling, bayonet fighting, calisthenics and games, produced an astonishing transformation. Alert, responsive, quick-witted, speedy and accurate in movement they had become in thirty days excellent soldier material. Physical directors who have done good, exact work have seen the same result.

(c) All Activity Develops Some Control

Any work of a physical nature of course develops a certain amount of body control, or, as it is sometimes called, agility. The

carpenter, the mechanic, the mason, and others doing artisan labor, have developed great skill in their own particular lines of work. The athlete, the tennis player, the expert golfer, the boxer, has developed great skill in his own line or lines of endeavor. The abilities possessed by these men, however, are limited to their particular lines of work; in other respects they may be clumsy and awkward. Physical education, on the other hand, aims at the development of general all-around body control. A varied program of natural athletics and play activities will contribute a great deal toward achieving these results, but cannot do everything. Calisthenics, because in this work we can shape our lesson largely according to our wishes, are especially suited to the development of these qualities.

(d) Recommended Calisthenic Procedures

To secure the desired results through calisthenics the following procedures are advocated. All the fundamental muscle groups should be exercised in each lesson; this practice results in the all-round training which is so desirable. The response method of conduct (command and number methods) require a great amount of alertness and inhibition, so this method should be used for the development of these qualities. Since the use of these methods requires a great expenditure of nervous effort, however, care should be taken that this method is not over-used. Precision and exactness should be demanded in all the exercises. This tends to develop accuracy and economy of effort. The response method of conduct is again useful in effecting the best results, especially when teaching new exercises. By requiring the class to take each position of each exercise, separately, the positions can be easily corrected and good form secured. After the exercises have been learned thoroughly the response method can be dispensed with. For the purpose of developing speed of movement all exercises should be done as rapidly as good form will allow.

CHAPTER III

PRINCIPLES OF NOMENCLATURE FORMATION

The system of names used in any science or art constitutes its nomenclature. Materials, methods of procedure, functions, conditions, and so on, for the sake of uniformity of expression and understanding, are given names which have definite meanings. Terms of this sort aid in making any science or subject clear and exact. An idea, condition or fact ordinarily may be expressed in a variety of ways. This situation frequently leads to confusion and misinterpretation. If, on the other hand, they can be reduced to a term or a series of terms with constant meaning, the possibility of error in misstatement and misunderstanding is reduced to a minimum.

Besides, a definite nomenclature makes for efficiency in communication. Certain ideas, conditions, laws, methods, principles, etc., may involve a great complication of procedures. We have, for instance, several theories of play, the Groos theory, the Schiller-Spencer theory, the Hall theory, the Patrick theory, the Lee theory and the Johnson theory. These vary greatly and to explain them or understand them requires considerable time and study. But after acquiring a knowledge of them, each may be referred to as the Groos theory, the Hall theory, the Lee theory, etc., and they are given complete significance. Without a nomenclature of this sort whenever one wanted to refer to one of these theories of play it would be necessary to outline the whole idea.

Nomenclature is very useful in a discussion of calisthenics, but it is particularly useful in calisthenic teaching. Certain instructions are repeated so often that for the sake of conservation and efficiency they are best reduced to brief, definite, meaningful terms or phrases. Attitudes, positions, exercises and methods of exercising constitute the bulk of calisthenic nomenclature.

I. NEED FOR STANDARD NOMENCLATURE

Calisthenic nomenclature is in a state of chaos in this country. Some time ago the writer was discussing this subject with a promi-

nent physical director who made the statement that there were "as many brands of nomenclature as there were physical instructors." Every book on the subject has a separate, individual set of terms. A separate and distinct nomenclature emanates from each of the schools of physical education. The various organizations, the Turners, and Sokols, the Y. M. C. A., the Army, the Navy, and others promoting physical training each has its own nomenclature. There are over twenty state physical training manuals published at the present time—a survey of them shows a complete absence of uniformity in terminology and technique. A great number of cities have their own manuals—here again we have differences. And when it comes to individuals, an instructor picks up one term here, another term there, and another term somewhere else, so that it is literally true that there are as many brands of nomenclature as there are instructors. Lack of federal and state coördination combined with an absence of organization on the part of the professional schools and societies is responsible for this.

This state of affairs is both a shame and a handicap. It is a shame that the physical training profession has not gotten together and adjusted a matter over which there should be no serious controversy, if any controversy at all. Confessedly, the material of physical training is controversial, but the simple naming of the fundamental positions in the free-exercise drill should not be the subject for passionate discourse and selfish aloofness, particularly in the light of the benefit which would accrue.

It is a handicap to the instructor in his own professional improvement. In listening to spoken discourse and reading the literature, the instructor hears and sees several terms used to express the same idea. One is constantly raising the question, "What does this term mean?" It interferes with accurate understanding and in many cases, especially with young instructors and students, many worth-while articles, using a terminology which differs from the one with which they are familiar, are so forbidding that they go unread.

In that physical instructors are constantly shifting from one institution to another it becomes a handicap to instruction. One year, working under one physical director, a class learns a certain nomenclature and the next year, working under another, they have

to learn a new one, completely different. As a Y. M. C. A. member expressed it to me, "Every physical director that comes along springs a new line of nomenclature." Changing the terminology in this way usually means that the first month is a total waste. The class is learning nomenclature and not, as they should be, learning exercises.

All of this, beyond question of doubt, is a weight on the back of the business of teaching. A simple, uniform terminology would eliminate much confusion and in many ways aid the general cause of physical education. The technique of instruction offers problems enough without adding the unnecessary one of terminology.

II. ATTITUDES

In the conduct of a free-exercise drill we find it necessary to have the exercisers use three attitudes—"At tension," "At rest" and "At ease."

(a) "At Tension"

To get the best results while exercising the instructor must have the exercisers attending to his directions and alert to respond—both in mind and body should be in a state of tension. The word "Attention" is used almost universally to put the class in this attitude. According to the dictionary, however, attention is "an act or state of attending or heeding; earnest consideration, thought or regard." It applies to the mental field solely. In the calisthenic drill, though, we want not only mental alertness but physical alertness also; we want physical and mental tension. In view of this fact, the command "At tension" has been adopted. In practice, though, the new command is pronounced and used precisely as was the old—"At ten-shun," with a brief pause after "ten" and with "shun" snapped out sharp and hard. So actually, the adoption of this command involves no changes; the difference exists merely in theory and on paper.

(b) "At Rest"

The attitude of "At tension" is straining and uncomfortable. Untrained men, especially, suffer very severely while standing in this attitude. During the long inspections and reviews imposed on the soldiers during the recent war it became a common sight to

see men toppling over on all sides; the strain was too great. While at Camp Devens the writer saw an experiment carried on which further proves the severity of standing in this attitude. A company of about one hundred and fifty men (recruits with from four weeks' to twelve weeks' training) were asked to stand "At tension" for five minutes. By the time the five minutes were up nine of the company either had been forced to sit down or had toppled over; and of those who stood through it the majority reported that they were quite exhausted at the end.

The strain of holding the attitude of attention under any condition is considerable, yet as implied above the strain of holding the mind alert and the body immobile is particularly exhausting. For this reason it is advisable to have the class relax when not actually in the performance of an exercise. Taking into consideration all of the conditions as they exist, the most satisfactory method for meeting this situation is to give them complete relaxation—relaxation of both mind and body. The command "At rest" conforming to general practice, is introduced to cover it. By this command the exercisers may move the parts of the body and talk, whistle and make other noises as they wish. The only limitation placed upon them is that they must keep their respective positions on the floor—the feet must be kept in a stipulated place, about fifteen inches apart.

(c) "At Ease"

But this is not all; we have another situation which has to be covered. During demonstrations and explanations it is necessary to have mental tension—the students must attend to the instructions of the instructor—but it is inadvisable to have physical tension. The attitude of "At tension," whereby the exerciser is required to fixate his eyes to the front, prevents the exercisers from seeing demonstrations. With the body relaxed he can attend to the same very readily; he can lean sideward, crane his neck, etc., to see what is going on. Experience has shown, however, that it is best not to allow the exerciser to move about too freely when in this attitude; a fixed standing position with body relaxed is far better. In addition, in order that the exercisers may hear explanations, it is necessary that quiet exists in the class. To cover the situation imposed by these several requirements the command "At

ease" is introduced. By this command the exercisers are required to stand in a definite position and attend to the instructor; the body is relaxed, they are allowed to move the trunk and head but they are restricted from making noises of any kind.

III. RECLINING ATTITUDES

The various attitudes are most generally used in the standing position. It occasionally develops, however, that it is desirable or necessary to change the attitude while the class is in a reclining position. It is, for instance, often necessary to give the class a brief period of relaxation, and again it is often necessary to make a demonstration or an explanation requiring an attitude of ease while the class is in this position. According to the foregoing usage of these terms, and incidentally general practice, if any of these commands are given while the class is in a reclining position, the exercisers are required to rise to a stand. In order to avoid this, it seems desirable to arrange a method of procedure whereby this can be avoided. It would be wasteful to have the class stand up and then immediately sit down. Inasmuch as the demands and conditions in the reclining positions are quite the same as those of the standing position the principles enumerated in establishing the attitudes to be used there are equally applicable here.

(a) Same Principles Followed as in Standing

The commands introduced for the several attitudes of the standing position may, with almost identical implications, be used with the reclining positions. In adopting the same set of commands the rule that the commands apply in the position the exercisers are in when the command is given: when the class is standing the exercisers change in standing attitudes, when they are reclining they change in reclining attitudes.

In the reclining position, therefore, the command "At tension" calls the exercisers into the fundamental reclining position they were in (seat on floor, back on floor, etc.) before taking the relaxed or easy position they are in at the time. The command "At rest" allows the exercisers to drop into a condition of complete relaxation—they may sit, lie, or rest on the floor as they wish and make any noise they care to. The only restriction placed on them is that they must keep their relative positions on the floor. The command

"At ease" requires the exercisers to maintain attention, but allows them to assume any comfortable reclining position they choose commensurate with the same. They are restricted from noise-making of any kind.

In summary, then, the three attitudes, whether used standing or reclining, are differentiated as follows: "At tension" calls for physical and mental tension; "At rest" calls for physical and mental relaxation; "At ease" calls for mental tension but physical relaxation. If the exerciser is standing when a change of attitude is ordered it is implied that the new attitude is to be taken in the stand; if he is reclining when a change is ordered it is understood that it is to be taken in the recline.

IV. MOVEMENTS AND POSITIONS

A calisthenic drill is composed of exercises, and exercises are composed of movements and positions. The movement or the position is the basic unit of the calisthenic drill; one of these must be accepted and set up as the fundamental source of our nomenclature. At this point we face a problem that is somewhat controversial; it may, at first glance, seem to be hypertechnical, but a little study will show it to be worth discussing.

What is the unit, the position or the movement? Looked at from one angle, positions are but terminal points of movements; and looked at from another angle, movements are but means of transference to and from positions. In other words, in the first case the movement is the important part of the exercise, the position merely incidental; in the second case, the situation is just reversed. Which of these points of view is the true one? Of the nomenclatures in use some incline to naming the positions, some incline to naming the movements, and some (most in fact) do both. From the theoretical point of view each is peculiarly significant and in different exercises either may be of predominate importance, but from the standpoint of practical pedagogy it is desirable to establish one as the unit.

(a) The Position is the Unit of Calisthenics

The position is chosen for several reasons. In the first place in a great number of exercises the positions or terminal points constitute the matters of primary significance. In raising the arms

sideward, for instance, what is our principal concern, the movement of raising the arms or the securing of a good position at the terminal point? In lowering the trunk forward, what are we most interested in, the lowering movement or a good position at the finish? In both cases it is decidedly the latter.

And in other exercises, exercises, we will say, wherein movement is the significant feature (trunk sideward-bending, knee bending, lunging, etc., in which large movements are important), it is necessary to have definite terminal points established in order to get the most satisfactory results. In trunk bending exercises, for instance, it does not matter especially how we do the bending but the extent of the bend and the plane of the bend are extremely important. To get the most out of the exercise the exerciser should bend as far as possible; the exerciser who bends only half way is getting only a portion of the possible results. The end positions even in such exercises thus are of primary importance.

The writer's views on this matter are based on an extended teaching experience that has taught him that if the positions are taken correctly, the movements will take care of themselves. Positions are definite, tangible and correctable. One may say that movements are also, but the answer to this is, "Yes, but they are not so get-at-able." Observe a good instructor and note which claims most of his attention; ninety-nine out of a hundred corrections, both individual and collective, are directed toward the taking or holding of positions. Movements are rarely mentioned. For these reasons the position and not the movement is considered as the unit of the calisthenic drill.

(b) Only Fundamental Positions Used

Accepting the principal, then, that the position is the unit of the calisthenic drill the question arises, what positions shall we use? If there is one point in free-exercising on which the physical instructor should have closed convictions, that point should be fundamentals. The calisthenic drill has definite physical functions to perform and for this reason should confine itself to definite fundmental activities. The average exerciser (and instructor too) has difficulty enough mastering the hundred or more fundamental positions without burdening him with a mass of secondary or derived positions. Besides, as conditions stand at present, we

do not have the time to waste on what one might call the "frills and fluffles." As physical instructors we have difficulties enough in securing a proper execution of the basic activities. Why dissipate our energy and waste our time on exercises comparatively valueless? Needless to say only fundamental positions have been introduced here.

(c) Method of Naming Positions

Since the positions have been accepted as the unit of calisthenics the problem of naming them now arises. What procedure shall we follow in naming them? Quite obviously the most practical way is to use descriptive terms. All the published nomenclatures follow this practice but many add some arbitrary terms. Since it is always best to keep material of this nature as simple as possible and since all of the desirable positions can be satisfactorily named with descriptive terms this method alone has been adopted for this work.

Every position involves two factors; (1) the part of the body and (2) the position it is to be placed in. The naming of the part of the body is a simple thing—each part has a name approved by scientific and popular usage, (hand, foot, trunk, etc.) and we can readily adopt these. The naming of the positions likewise offers no particular problems. The body or its parts may assume attitudes in three dimensions: (1) free; (2) one part of the body in juxtaposition to another part; (3) position of resting on the floor. In the first case we can follow the principle of naming the position with relation to its direction from the fundamental position; that is, arms sideward, forward, upward, etc., trunk forward, sideward, etc; leg sideward, backward, etc. In the second case we can indicate the two parts that are to be placed together; hands on hips, hands on neck, etc. In this third case we can name the part or parts to be placed on the floor; back on floor, seat on floor, etc.

What form should these commands take? Under the condition which they are used there are two principles which should be observed; (1) each command should be as complete as necessary, but at the same time (2) it should be as concise as possible. The principle of conciseness is duly recognized by most of the authors of nomenclatures, but in many cases it is overdone at the expense of completeness. In their effort to be concise the com-

mands do not state exactly the situation to be covered. This is to be avoided.

The principles outlined above, excepting in one or two individual cases, have been adopted for this work. Each command covers, first, the part of the body involved, and then, the position in which it is to be placed. Also, each has been made as concise as possible without neglecting its completeness.

(d) Directory and Executory Signals

The taking of positions involves movement. Experience has proven that a class responds very unsatisfactorily if it attempts to act immediately after the presentation of the new position; the class neither acts in unison nor with snap or exactness. A group of exercisers, for instance, instructed to take the "Squat on floor" position under these conditions will respond quite disorderly. Disorder, when order is wanted, is ruinous to class morale and must therefore be avoided. For this reason the instruction, or, as it is commonly called, the command, is broken up into three sections; (1) the directory order, (2) the pause and (3) the signal for execution. By way of illustration we have, "Hands sideward—pause —Place." The directory order, "Hands sideward," names the new position. The pause gives the order an opportunity to "sink in." And the signal for execution, "Place," instructs the class to perform the ordered change.

(e) Selecting Signal for Execution

A great variety of terms are used for the command of execution. In some cases verbs descriptive of the act, such as "Fling," "Thrust," "Swing," "Kick," "Raise," "Lower," "Bend," "Sink," and so on are used. In other instances, "Move" and "Place" are used. Now, inasmuch as we have previously taken the stand that the position is the basis of our nomenclature, and further that the movement should be executed over the shortest route in the shortest possible time, excepting when specifically directed otherwise, it seems that a great combination of signals like this is verbiage and unnecessary.

If we wanted merely a unified movement, any audible signal would do; but, wanting also, as we do, a vigorous, snappy movement, it is better to have a vigorous, snappy signal. A little experi-

menting has shown conclusively that pounding the floor, clapping the hands, blowing a whistle and similar practices, serve very well, but do not exactly meet our conditions (they are additional encumbrances); the most satisfactory signal is a vocal one.

What should be the signal for execution? In view of the fact that by our signal for execution we direct the class to move to the new position, or place the body in the new position, it seems that we should find our suggestions here. The word "Move," while it is from some standpoints, preferable, lacks snap, vigor, volume, and other qualities desirable in a signal of execution; there is no "kick" in it. For this reason it does not serve the purpose well. The word "Place," on the other hand, possesses just the qualities we want. It permits of a clear, clean-cut enunciation; it has just the right punch.

The word "Place," therefore, excepting for inhaling, exhaling and standing erect is adopted as our command of execution. As the respiratory act is, obviously, not a placement it would be wrong to use the word "Place" with it. The commands "In" and "Out" have been adopted. Inasmuch as five different classes of students have unanimously endorsed the use of the command "Stand erect—Stand," in preference to, "Body normal—Place," which is the alternative command for assuming a standing position when in an "on floor" position, this has been adopted.

The word "Place" as a universal command of execution will seem a little awkward to a few experienced instructors, but this is due, merely, to lack of familiarity and understanding. It is a common practice when directing the class to place the hands in a sideward position to say, "Hands sideward—Place," but in placing the trunk in the sideward bended position it is a common practice to say, "Trunk sideward right—Bend." Trunk sideward right is a position exactly the same as hands sideward and to get to it requires a placement in exactly the same manner. In one case we place the arms in a definite position; in the other we place the trunk in a position exactly as definite. Both, strictly speaking, are placements, and to tell the exercisers to place the trunk in a given position is precisely as good form as to tell them to place the arms somewhere. It is also common practice in raised leg positions to use the word "Raise" for the command of execution. "Right foot forward—Raise," is an example. Now if we can say,

"Right hand forward—Place," within good propriety, why can we not with equal propriety say, "Right foot raised forward—Place." In our directory command in both cases we name the position; in our command of execution we direct the class to make the placement.

Custom is a great tyrant. The experienced instructor has used "Bend," "Turn," "Rise," "Lower," "Fling," etc. with certain movements so long that they have become indissolubly linked up with his instruction. The introduction of new commands in their stead rasps and confuses for a while, but with use this disappears, and, as time goes on, the utility of one command of execution over a combination of four or six or eight becomes recognized. Actual experience by a number of students at the University of Illinois who have had several years of previous field work has proven this to be true. After three or four weeks of use the novelty of the command wears off and where a dozen commands were used before one serves the purpose with increased effectiveness.

(f) Fundamental Positions Designated by Command "Normal"

In addition to introducing the word "Place" as a unitary signal for execution another feature has been introduced which, experience has proven, justifies its adoption. This is the use of the word "Normal." In common usage, to return parts of the body to their fundamental positions, we have such commands as, "Hands down," "Foot replace," "Trunk forward turn," "Trunk upward raise," and so on. In each of these cases the normal position of the arms, legs, and trunk is wanted. What is simpler than expressly saying so? The word "Normal" covers each of the situations perfectly. In place of all of these varieties of commands, therefore, the word "Normal" has been adopted. This term is used in the following manner: "Hands normal—Place," "Foot normal—Place," "Trunk normal—Place," and so on. As with the word "Place," the word "Normal" will at first sound odd, but with usage this will disappear and its utter simplicity become apparent.

(g) Simple and Combined Movements

Positions involve four parts of the body, the arms, the head, the legs, and the trunk. To take a new position with one part of the body is called a simple movement. The nomenclature for

covering simple movements is as follows: "Hands upward—Place," "Head backward—Place," "Trunk bent right—Place." To take new positions with two or more parts of the body is called a combined movement. Combined movements usually involve the arms and the head, the legs and the trunk, the arms and the legs, the arms and the trunk, and the arms, legs and trunk. The method for naming positions that involve combined movements consists of naming the positions successively and, after a pause, commanding, "Place." There is no prescribed order for naming the various parts but in general it seems more effective to name the part involving the larger muscle masses, or that which seems to be the more definite, last. "Hands on neck, trunk lower—Place," "Hands on shoulders, right foot sideward—Place," "Feet straddle, trunk downward, hands on floor—Place," are samples.

Exercises are carried on by moving from position to position. To take most positions, usually but one or two segments of the body are actively involved. What is done with segments of the body not actively engaged? Briefly, parts of the body not actively involved in taking a new position are assumed to retain the same relative positions in the new position that they held in the old. By way of illustration, if the class is standing erect with the hands on the hips and the command, "Trunk right—Place," is given, the class assume the new position without changing the position of the hands.

V. "START" AND "STOP" EXERCISES

The methods for conducting an exercise may be divided into two distinct types, response and continuous. The command and number methods are of the first type. The rhythm, cadence, and other methods are of the second type. In the first case each movement is made in definite response to a given signal. In the second case the whole exercise, once started, is repeated continuously.

To lead a class in exercising by a response method we merely name the successive positions following each with the signal of execution or substitute numbers for the same—"Hands forward—Place," "Hands normal—Place," or, "One," "Two." To lead a class in exercising by a continuous method we must signal the class when we want them to begin and when we want them to discontinue

an exercise. To start a class the commands "Begin," "Commence," "Go," "Now," "Exercise," and "Start" are all used. Of these the command "Start" is the most satisfactory; it is brief and is much more forceful than the others.

To stop a class performing an exercise the commands "Halt," "Hold," and "Stop," have all met with popular approval. Of these the command "Stop" is preferable. There is no serious objection to the use of the first two, but if we set the class to work by the command "Start" it is only logical to check them by the command "Stop."

VI. NAMING EXERCISES

As pointed out previously all exercises which are used repeatedly should be given names. If the instructor doesn't name the exercises used he must redescribe or redemonstrate them each time he uses them. On the other hand, if the instructor names the exercises the class soon associates the names with them and he can eliminate the description or demonstration. Thus it will be seen, naming the exercises not only facilitates instruction, but it conserves the instructor's energy.

The guiding principle here is to use short, catching titles or phrases. They may be descriptive, suggestive, or mimetic. Samples of these three types are given in the following lists:

Descriptive	*Suggestive*	*Mimetic*
The Side Bender	The Belly Remover	The Windmill
The Kicker	Rubber Legs	The Indian Dance
The Toe Tapper	The Liver Squeezer	The Weeping Willow
The Leg Lifter	Chesty Charlie	The Jumping Jack
The Stretcher	The Hunch Back	The Berry Picker

CHAPTER IV

CALISTHENIC NOMENCLATURE

The number and variety of positions which are possible in calisthenics are practically unlimited. In keeping with our policy of sticking to fundamentals, however, only those positions which have definite utilitarian significance have been included in the present work. The principles enunciated in the preceding chapter have guided in the selection of names. Any additional positions that the instructor desires to use can be named by following the procedure outlined there.

I. FUNDAMENTAL STANDING ATTITUDES

1. "Class—At tension." Heels on the same line. Feet together and parallel. Knees straight. Hips level. Trunk erect on the hips, and the spine extended throughout its entire length. Pelvis tilted slightly upward in front. Abdomen drawn in and up. Chest arched. Shoulders forced back until square. Arms hanging naturally with elbows straight. Palms in, fingers extended and together. Head erect, chin drawn in so that the axis of the head and neck is vertical. Eyes straight to the front. Weight resting equally on the balls and heels of the foot. Attention is fixed on the instructor. Both mental and physical tension exist. (Fig. 1.)

2. "Class—At rest." The right foot is maintained in its original position. The left foot is placed fifteen inches sideward. The feet should be parallel. The arms and body may be moved freely but the general upright position should be maintained. The exerciser is permitted to talk, whistle, sing, clap his hands, or make any noise he chooses. Both mental and physical relaxation exists. (Fig. 2.)

3. "Class—At ease." The right foot is maintained in its original position. The left foot is placed fifteen inches straight to the side. The feet should be parallel. The weight rests equally on both feet. Hands clasped behind the back. The head and body may be moved freely. The exerciser is not permitted to make

any noise, vocal or otherwise. The exerciser is not permitted to slump. Attention is fixed on the instructor. Mental tension and physical relaxation exists. (Fig. 3.)

The Upright Position

The fundamental features of the erect position are so extremely important that every one should have a thorough understanding of

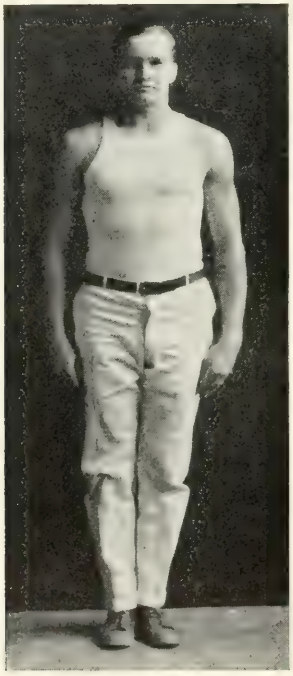


FIG. 1

FIG. 2

them. Thomas and Goldthwait have outlined these exceedingly well in their little treatise on, "Body Mechanics and Health."

"In the upright position, the poise or attitude in which there is the least strain, and consequently the correct attitude, is with the body held so that it is made as tall as is possible without rising on the toes. In this position the head is erect, the shoulders are carried so that their center is distinctly posterior to the center of gravity, the chest is high, the abdomen is flat and the spinal curves are slightly convex backward in the dorsal region and convex forward in the lumbar region. The pelvis is inclined forward so that

the axis from the promontory of the sacrum to the top of the pubic bone is downward and backward thirty degrees from the horizontal, and the inclination of the sacrum being downward and backward so that the axis of the pelvis is at right angles with the plane of the brim of the pelvis, or about sixty degrees from the horizontal. In this position the anterior portion of the upper part of the sacrum, together with the last lumbar vertebra, is almost

Fig. 3

directly over the top of the great trochanter, or a little posterior to the center of the hip joint. In this position the Y ligament is made tense as well as the iliopsoas muscle, these two structures serving to prevent the pelvis from lessening its forward inclination. In this position the hamstring muscles are tight, giving support to the knees as well as preventing an increase in the forward inclination of the pelvis. The knees are straight and the weight is received at the foot upon the strangalus with the posterior calf muscles tight, so that the heel rests lightly and the chief strain is thrown upon the ball of the foot. The posterior calf muscles are tense, and the result being that the posterior tibial and peroneus

longus by their contraction hold the tarsal bones in place, the foot thus being in the position of greatest strength, while the flexor muscles of the toes hold them in contact with the floor, giving a stable base and rendering the forward propulsion of the body possible with the least effort.

"The muscles of the trunk in this position are in such balance that while the anterior and posterior groups are in slight contraction, neither group is strained and but few of the ligaments are under tension. The shoulder is slightly back of the lateral median line of the body so that the weight is received largely upon the thorax, none of the muscles being in more than slight contraction, and the strain upon the posterior muscles which must occur when the shoulder is held forward is absent. The head is held erect and so balanced that while all of the muscles, the anterior, posterior, and lateral, are in slight contraction, each group is properly balanced by the others and none are subjected to more work than they can easily perform. With the body so poised, not only is there the least possible expenditure of energy required for the maintenance of the position, but it is from this position that action is made most easily. All of the parts are in balance, so that whatever the movement, whether it concern chiefly one part or another, the start is made with no waste of energy in correcting the poise of 'gathering one self' preparatory to the action."

Normal Pelvic Tilt

Securing the normal pelvic tilt is to be considered as the key to good posture in the standing position. Held in its normal position, the pelvis should rest at an angle of from sixty to sixty-five degrees from the standing surface. In the untrained individual this is commonly considerably increased, resulting in all of the faulty consequences associated with bad posture, straining the sacro-iliac and sacro-lumbar joint, exaggerating the lumbar and dorsal curves of the spine, throwing the head forward, sagging the abdomen, sinking the chest, and all of the organic dist ırbances which follow in their train. Held in its proper position these faults tend to be eliminated. Thus, training the individual to assume this position becomes an activity of primary importance in our calisthenic work. In fact, it is considered best, by those who have

had an extended practice in this field, to provide this training preliminary to the regular calisthenic instruction.

The following exercises are suggested for developing the proper tilt of the pelvis:

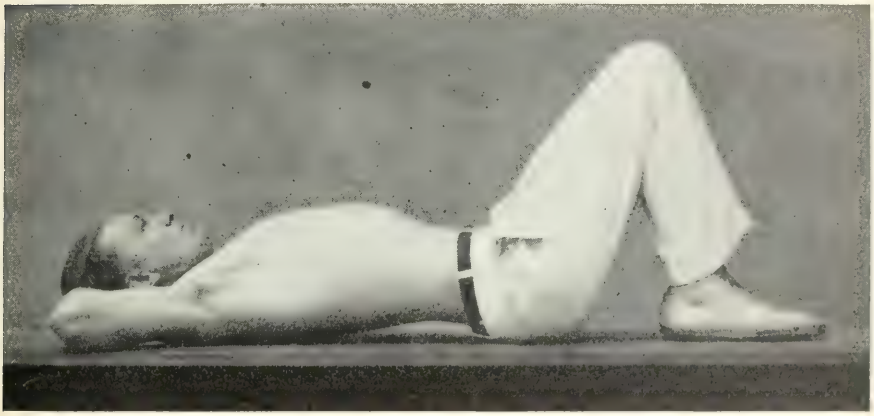


FIG. 4

1. Starting position. Back on floor, feet at buttocks. (Fig. 4.)

A. Draw the lumbar spine down to the floor. This is done by

FIG. 5

tightening the abdominal and gluteal muscles. Hold this position for ten seconds. Breath normally. (Fig. 5.)

B. Assume the normal relaxed position.

2. Starting position. Back on floor, feet normal. (Fig. 6.)
Exercise same as above. (Fig. 7.)

FIG. 6

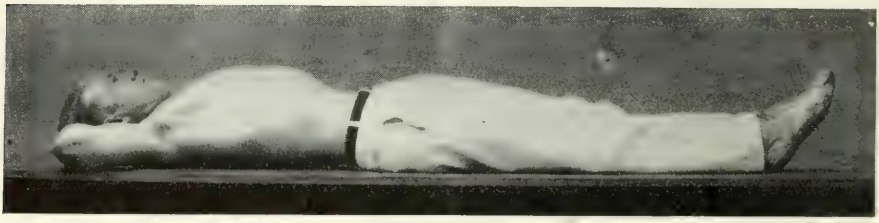


FIG. 7

3. Starting position. Back on floor, feet at buttocks, hands over head on floor.

Exercise same as above.

4. Starting position. Back on floor (feet normal), hands over head on floor.

Exercise same as above.

5. Starting position. Stand with back toward a wall. Heels four or five inches from the wall; hips, shoulders and head touching the wall. (Fig. 8.)

A. Draw the lumbar spine back against the wall. This is done by tightening the abdominal and gluteal muscles. Hold this position for ten seconds. Breath normally. (Fig. 9.)

B. Assume the normal relaxed position.

6. Starting position. Feet apart, knees quarter bent, trunk inclined forward, hands on knees.

A. Draw abdomen in and up. Hold for ten seconds. Breath normally.

B. Relax abdominal muscles.

After the exercisers have learned to take this position correctly

in the exercises outlined above they should be required to practice it in the free standing position. The instructor should aim to develop the muscles involved in this act to a good tonic condition so they will remain in semi-contraction at all times. In addition to this the exercisers should be instructed to assume this position vigor-

FIG. 8

FIG. 9

ously when doing exercises which call for strong antero-posterior adjustment, such as hands on shoulders, hands on neck, head pressed backward, etc. By fixating the pelvis in this way we prevent exaggeration of the lumbar curve and thereby increase the effectiveness of the exercise.

All in all, training the class to assume and retain this position requires more of the instructor's time and attention than any other

single activity. He must refer to it constantly in his spoken instructions and, in moving about through the class, constantly make tests as to whether the proper position is being held or not. These tests may be made by jabbing the thumb into the gluteal muscles. If the muscles of this region are hard and the abdomen is drawn in the exerciser is working satisfactorily; if these conditions do not obtain the instructor must make the necessary corrections.

Feet Parallel

There is one feature of the fundamental standing position recommended here, to which especial attention should be called; this is the adoption of feet together and parallel as the fundamental standing position. This position has been adopted by a great number of institutions in Sweden, Denmark and England, and also by a number of normal schools of physical training in this country. The arguments favoring this position are clear and indisputable. One wonders why its adoption has been so tardy.

The great argument favoring the parallel position is that by standing in this position we train the feet and legs to assume the position in which they are constructed to function. An analysis of the mechanics of walking and running show that the legs work most efficiently when the toes are pointed straight to the front. In this position the hip, knee, and ankle joints operate directly parallel to the direction of progress and the body is propelled forward in direct line with the long axis of the foot. In traveling forward we are propelled mainly by a vigorous flexion of the ankle and the big toe. With the foot held straight to the front the weight is distributed over the longitudinal arch and thus from every standpoint the process of forward locomotion is aided. When the feet are turned out the act of walking becomes seriously disarranged and mechanically disadvantageous. Imagine the mechanical affectiveness of an automobile which has the wheels turned out at an angle of forty-five degrees.

In further confirmation of the thesis that the straight position of the feet is the strong position we can refer to our own actions while standing on ice, on the deck of a rolling ship or on the floor of a moving train. Under all these conditions we instinctively turn the toes in, in an attempt to grip the surface we stand on to stabilize our equilibrium.

By pointing the feet directly to the front in our calisthenic exercising we train the feet and legs, or tend to fixate them, in the position in which they are best adapted to function. Besides, standing in this position tends to strengthen the arches. As we turn the feet out, due to their anatomical make-up there is a distinct tendency toward flattening—the foot lies flat on the floor. Exercising the feet in the parallel position, on the other hand, calls into play the muscles involved in maintaining the arches.

There are, then, two great advantages in standing with the feet parallel as compared to pointing them out; one, it tends to fixate them in the position of their greatest functioning efficiency; two, it tends to strengthen the arches, giving us stronger, healthier feet.

It should also be pointed out here that, in continuance of this principle, when either foot is displaced the foot is pointed in the same direction as the knee. In doing this we merely follow a fundamental law of body mechanics.

Good Position at All Times

It is impossible to pay too much attention to the proper securing of the fundamental standing position. Taken correctly, it is a natural, graceful position; the individual is alert and tense but not rigid. With beginners it often becomes a highly exaggerated position that is ridiculous. Due to the fact that the great majority of people normally slouch, it requires a little effort to hold this position; lack of training causes this effort to be overapplied, resulting in a condition of stiffness. When the position is taken this way it can be maintained only with difficulty so that when "At ease" or "At rest" is given, there is such a complete letting-down that the tendency is to counteract all that has been gained. The instructor should see to it that a good position is secured but he should also be particularly careful, especially when working with new classes, that this condition of stiffness is avoided.

It is very important that the instructor should insist on the exercisers assuming a correct posture while standing in the relaxed and easy positions, also. The fundamental postural habits should be observed here as in the tense position; the chief difference, from the physical standpoint, being in the position of the feet; the shoulders, head, chest, and trunk should be maintained in essen-

tially the same positions. This conception of "At ease" and "At rest" however, is not the common one; too often they are interpreted as "Loll" and "Slouch"—a general letting-down from the very standards the drill is trying to accomplish. The instructor should insist on "good posture at all times." When the instructor has taught the class to stand upright in the tense position, he has started his work; when he has taught the class to stand upright in the easy and relaxed positions, he has finished it.

II. FUNDAMENTAL RECLINING ATTITUDES

(4) "Class—At tension." On this command the class snaps into the fundamental position which they were in just previous to taking their present easy or relaxed attitude. Both body and mind are alert to the directions of the instructor.

(5) "Class—At rest." On this command the class drops into a state of complete relaxation. The exercisers must retain their relative positions, and remain in a reclining position, but they are allowed to move the parts of their bodies as they wish. They may also talk, whistle, sing, or make any other noise as is permitted in the standing "At rest" attitude. Both mental and physical relaxation exists.

(6) "Class—At ease." On this command the class assumes an easy or relaxed attitude in the reclining position, but looks at and listens to the instructor. The exercisers must retain their relative positions on the floor, but may move the various parts of the body as they wish. Unnecessary movement should be avoided. Noise making of every nature is prohibited. Mental tension and physical relaxation exist.

Use of Reclining Attitudes

If the instructor wishes, and it is not altogether a bad idea, he may have the exercisers take the reclining position from the erect position on two counts instead of one. To do this, the following procedure is suggested: For purposes of illustration let us use, "Back on floor, in two counts—One—Two." On the command "One" the exerciser takes the "Squat on floor" position. On the command "Two" they take the "Back on floor" position. All the reclining positions may be taken in this same manner. The erect position may be taken from any of the reclining positions in

a similar manner; on count "One," one or both feet are placed under the body so the exercisers can conveniently rise to the erect position. On count "Two" the exercisers rise to the normal standing position.

Movement from one reclining position to another should be by the shortest and quickest route, each individual moving independently. This will be found more satisfactory than attempting to standardize a method.

III. FUNDAMENTAL POSITIONS OF THE ARMS

7. "Hands sideward—Place." Arms extended sideward. Fingers and thumbs together and extended. Palms up. Hands at shoulder height and forced well back. Shoulders held down. Elbows straightened. (Fig. 10.)

FIG. 10

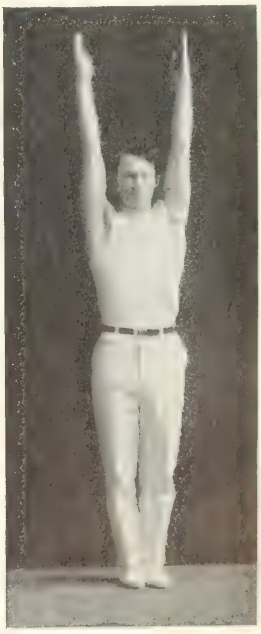


FIG. 11

8. "Hands upward—Place." Arms extended parallel over head. Fingers and thumbs together and extended. Palms turned toward each other. Elbows straightened. (Fig. 11.)

9. "Hands sideward downward—Place." Arms held at a position halfway between sideward and normal. Fingers and thumb

together and extended. Palms upward. Elbows straightened. Shoulders held down and retracted.

10. "Hands sideward upward—Place." Arms held at a position halfway between sideward and upward. Fingers and thumb together and extended. Palms upward. Elbows straightened. (Fig. 12.)

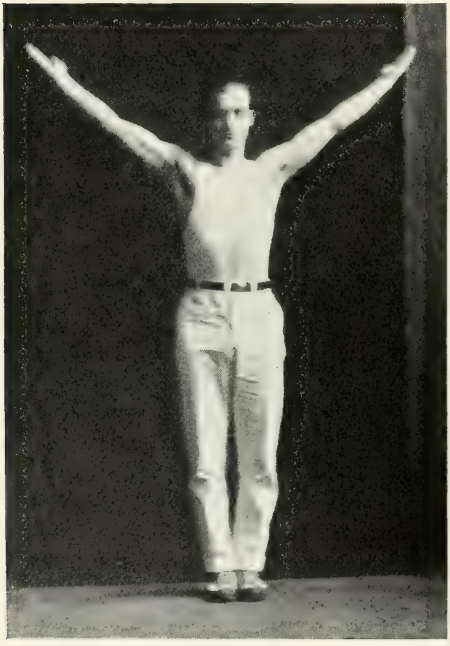


FIG. 12

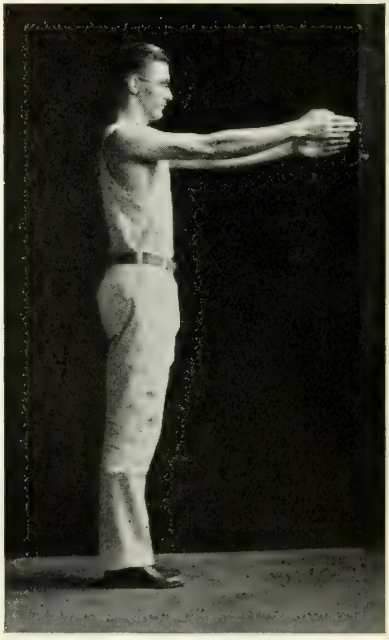


FIG. 13

11. "Hands forward—Place." Arms held forward. Hands held at shoulder width and at shoulder height. Fingers and thumb together and extended. Palms turned toward each other. Shoulders down and well retracted. Elbows straightened. (Fig. 13.)

12. "Hands backward—Place." Arms held parallel and forced back from their normal position. Fingers and thumb together and extended. Palms facing toward each other. Elbows straightened. Shoulders held down. (Fig. 14.)

13. "Hands on hips—Place." Hands placed on hips, fingers to front, thumb to rear. Elbows pointing halfway between sideward and backward. Shoulders retracted and down. Note: This

is a passive position and not an active position of the arms. (Fig. 15.)

14. "Hands at waist—Place." Elbows drawn directly back. Little fingers touching waist. Fists clenched, palms up. Shoulders held down. (Fig. 16.)

FIG. 14

FIG. 15

15. "Hands on chest—Place." Forefingers touching chest at shoulder height. Palms down. Fingers and thumb extended and together. Elbows at shoulder height, extended sideward and retracted. Shoulders held down. (Fig. 17.)

16. "Hands at shoulders—Place." Hands at side of shoulders. Fists clenched, palms in. Elbows sideward, downward and drawn back. Shoulders held down. (Fig. 18.)

17. "Hands on neck—Place." Fingertips touching each other and placed lightly on the back of the neck. Elbows extended sideward and drawn back. Shoulders held down. (Fig. 19.)

18. "Hands turned outward—Place." The hands and arms are turned outward as far as possible. The relative position of the arms does not change. (Fig. 20.)

FIG. 16

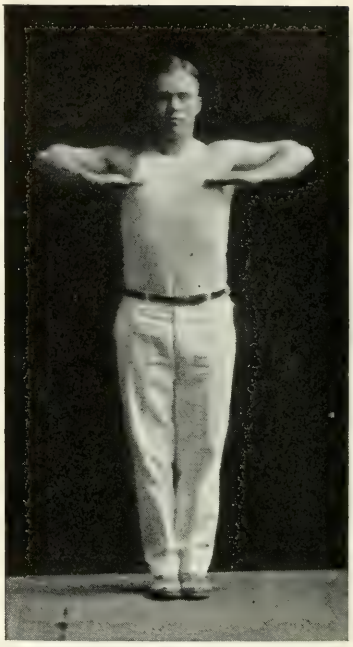


FIG. 17

FIG. 18

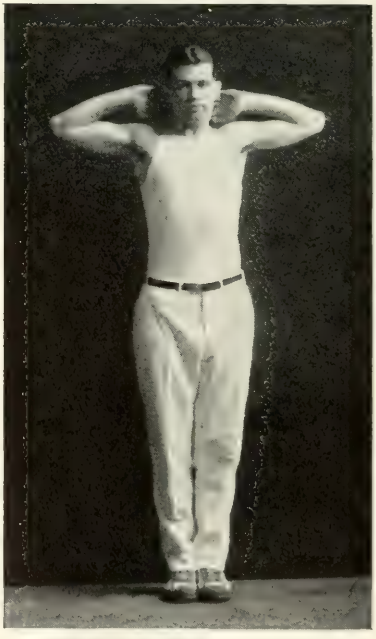


FIG. 19

19. "Hands normal—Place." The normal position of the arms. Arms hanging at the sides. Elbows straight. Fingers extended and together. Palms in.

20. "Elbows forward—Place." This position may be taken from two derived positions of the arms, hands on neck and hands

FIG. 20

FIG. 21

on shoulders. In both cases the elbows are placed forward while the hands remain in essentially the same positions "on the neck" and "at the shoulders." (Fig. 21 and Fig. 22.)

21. "Elbows sideward—Place." This command is used to place the arms in their original position following the use of the command "elbows forward." The arms are returned to the normal position of "hands on neck" or "hands at shoulders."

IV. FUNDAMENTAL POSITIONS OF THE HEAD AND CHEST

22. "Head pressed backward—Place." Head pressed (not tilted) backward. Chin drawn down and in. (Fig. 23.)

FIG. 22

FIG. 23

FIG. 24

FIG. 25

23. "Head bent backward—Place." The head is bent backward as far as possible. Chin drawn down and in. (Fig. 24.)

24. "Head bent forward—Place." The head is bent forward as far as possible. Chin drawn down and in. (Fig. 25.)

25. "Head bent right (left)—Place." The head is bent in the indicated direction as far as possible. Chin drawn down and in. (Fig. 26.)

FIG. 26

FIG. 27

26. "Head turned right (left)—Place." Head turned as far as possible in the indicated direction. Chin is drawn in. (Fig. 27.)

27. "Head normal—Place." The normal position of the head. Head erect, chin drawn in so that the axis of the head and neck is vertical.

28. "Chest upward—Place." The chest lifted and arched. Abdomen is drawn in and up. Buttocks are tightened. Breathing continues normally. (Fig. 28.)

29. "Chest normal—Place." The normal position of the chest.

30. "Inhale—In." The lungs are filled to capacity.

31. "Exhale—Out." The air is totally expelled from the lungs.

V. FUNDAMENTAL POSITIONS OF THE TRUNK

32. "Trunk half lowered—Place." Trunk inclined forward at an angle of forty-five degrees from the normal position (half way between the vertical and horizontal planes). Body bent only at hips. The back is flat. Chin held in. Eyes directed to the front. All parts of the trunk and legs keep the same relative position as in the normal position. (Fig. 29.)

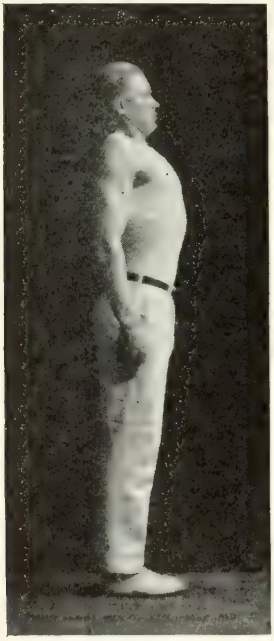


FIG. 28

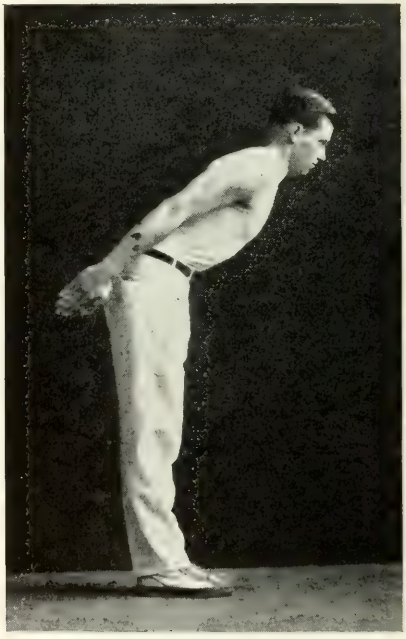


FIG. 29

33. "Trunk lowered—Place." Body inclined forward at an angle of ninety degrees from its normal position (horizontal). Body bent only at the hips. The back is flat. Chin held in. Eyes directed to the front. All parts of the trunk and legs keep the same relative positions as in the normal position. Note: Some individuals in the beginning, cannot quite reach the horizontal level and keep the back flat. In such cases they should incline forward only as far as they can while keeping the back flat. (Fig. 30.)

34. "Trunk bent forward—Place." Body bent forward as far as possible, bending at the hips and throughout the whole length of the spine. Neck also bent forward. (Approximate the nose to the knees). (Fig. 31.)

35. "Trunk bent backward—Place." The body is bent backward as far as possible, bending at the hips and throughout the entire length of the spine. Neck also bent backward. (Fig. 32.)

FIG. 30

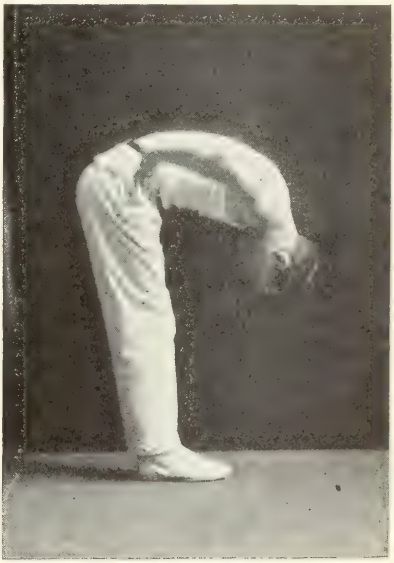


FIG. 31

36. "Trunk bent right (left)—Place." Trunk inclined in the indicated direction. The spine is bent throughout its entire length as far as possible. Eyes directed to the front. All parts of the trunk keep the same relative position as in the normal position. (Fig. 33.)

37. "Trunk turned right (left)—Place." The trunk is twisted as far as possible in the indicated direction. The hips are fixated so all the twist takes place in the waist and thorax. Arms, shoulders, and head hold same relative positions as in the normal positions.

38. "Trunk normal—Place." The normal position of the trunk. Trunk erect on the hips; the spine extended throughout its entire length.

VI. FUNDAMENTAL POSITIONS OF THE LEGS

39. "Knees quarter bent—Place." Knees are bent slightly and held slightly apart. Heels are kept on the ground. Weight is equally distributed on heels and toes. Trunk is held erect in its normal position. (Fig. 34.)

40. "Knees half bent—Place." Knees are half bent and held slightly apart. Heels raised from the floor. Weight resting equally on the toes of both feet. Trunk is held upright in its normal position. (Fig. 35.)

FIG. 32

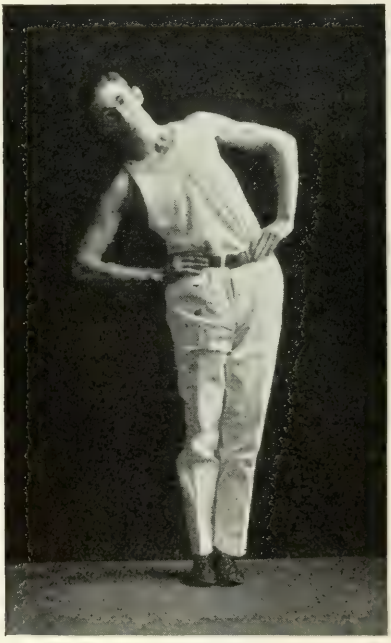


FIG. 33

41. "Knees fully bent—Place." Knees are bent to the full extent and spread at an angle of forty-five degrees. Heels raised, weight resting on the toes. Trunk held upright in its normal position. (Fig. 36.)

42. "Knees normal—Place." The normal position of the knees. Knees straight.

43. "Heels upward—Place." Heels raised as high as possible. Weight resting on the balls of the feet. (Fig. 37.)

FIG. 34

FIG. 35

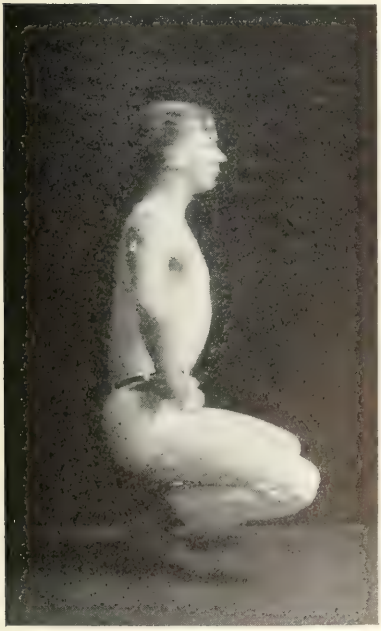


FIG. 36

FIG. 37

44. "Heels normal—Place." The normal position of the heels. Heels on floor.

45. "Right (left) knee upward—Place." The indicated knee is raised forward and upward as far as possible. Foreleg is pressed against back of thigh. Toe is pointed.

46. "Right (left) foot raised forward—Place." The indicated foot is raised to the front as high as possible. Knee straight; toe pointed. To maintain equilibrium the trunk must be inclined a trifle backward. (Fig. 38.)

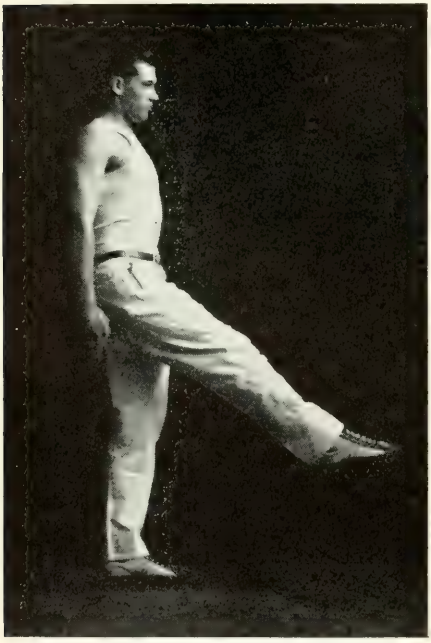


FIG. 38

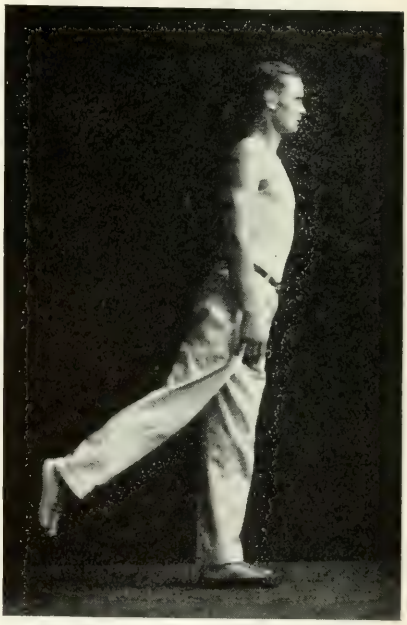


FIG. 39

47. "Right (left) foot raised sideward—Place." The indicated foot is raised sideward and upward as far as possible. Knee straight, toe pointed. To maintain equilibrium the trunk must be inclined a trifle away from the side of the raised leg.

48. "Right (left) foot raised backward—Place." The indicated foot is raised backward as far as possible. Knee straight, toe pointed. To maintain equilibrium the trunk must be inclined a trifle forward. (Fig. 39.)

49. "Right (left) foot forward—Place." The indicated foot

is placed forward two foot lengths from its normal position. Both knees straight. Weight supported equally on both feet. (Fig. 40.)

50. "Right (left) foot sideward—Place." The indicated foot is placed sideward two foot lengths from its normal position. Toe of displaced foot points straight to front. Both knees straight. Weight supported equally on both feet. (Fig. 41.)

FIG. 40

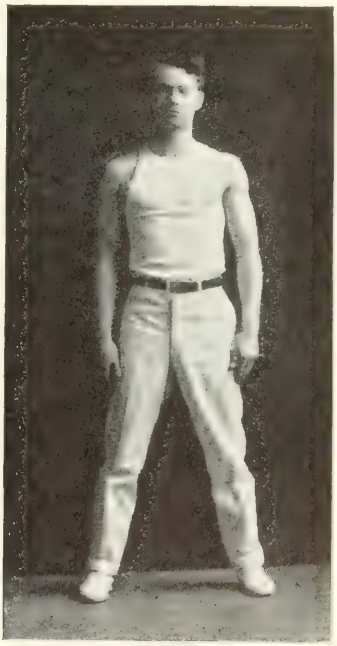


FIG. 41

51. "Right (left) foot backward—Place." The indicated foot is placed backward two foot lengths from its normal position. Both knees straight. Weight supported equally on both feet.

52. "Right (left) foot charged forward—Place." The indicated foot is placed three foot lengths forward from its normal position. The foot points directly forward. The knee of the displaced leg is bent slightly. The stationary leg is fully extended, heel raised. The trunk is retained in its upright position. The weight of the body rests principally on the displaced foot. Eyes directed to the front. (Fig. 42.)

53. "Right (left) foot charged sideward—Place." The indicated foot is placed three foot lengths backward from its normal position. The foot points forward oblique. The knee of the displaced leg is bent slightly. The stationary leg is fully extended. Trunk retained in an upright position. The weight of the body rests principally on the displaced foot. Eyes directed to the front. (Fig. 43.)

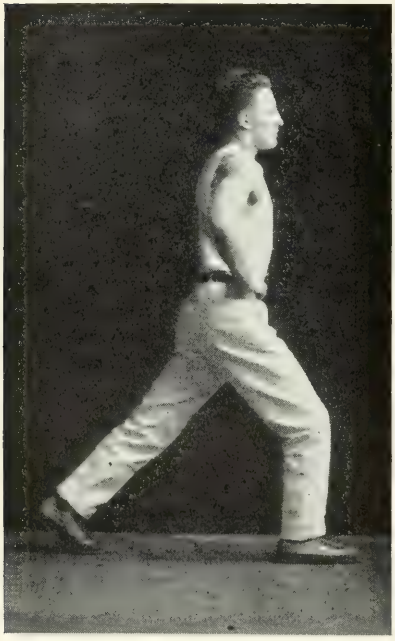


FIG. 42

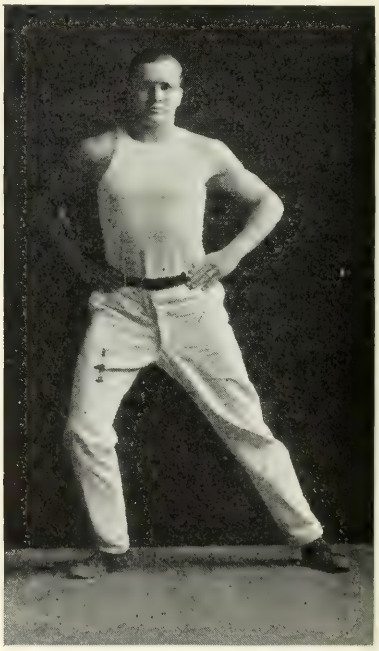


FIG. 43

54. "Right (left) foot charged backward—Place." The indicated foot is placed three foot lengths backward from its normal position. The foot points forward oblique. The knee of the displaced leg is bent slightly. The stationary leg is fully extended. Trunk retained in an upright position. The weight of the body rests principally on the displaced foot. Eyes directed to the front. (Fig. 44.)

55. "Right (left) foot charged forward-oblique—Place." The indicated foot is placed three foot lengths in an oblique direction (halfway between forward and sideward) from its normal position. The foot points forward oblique. The knee of the dis-

placed leg is bent slightly. The stationary leg is fully extended. The trunk is retained in an upright position. The weight of the body rests principally on the displaced foot. Eyes directed to the front.

56. "Right (left) foot charged backward-oblique—Place." The indicated foot is placed three foot lengths in an oblique direction (halfway between sideward and backward) from its normal

FIG. 44

FIG. 45

position. The foot points forward oblique. The knee of the displaced leg is bent slightly. The stationary leg is fully extended. Trunk retained in its normal upright position. The weight of the body rests principally on the displaced foot. Eyes directed to the front.

57. "Right (left) foot lunged forward—Place." The indicated foot is placed forward as far as possible from its normal position. The foot points directly forward. The knee of the displaced leg is almost fully bent. The stationary leg is fully extended, with the heel raised. The trunk is inclined forward in a direct

line with the stationary leg. The weight of the body rests wholly on the displaced foot. Eyes directed to the front. (Fig. 45.)

58. "Right (left) foot lunged sideward—Place." The indicated foot is placed sideward as far as possible from its normal position. The foot points forward-oblique. The knee of the displaced leg is almost fully bent. The stationary leg is fully extended with the heel raised. The trunk is inclined sideward in a direct line with the stationary leg. The weight of the body rests wholly on the displaced foot. Eyes directed to the front. (Fig. 46.)

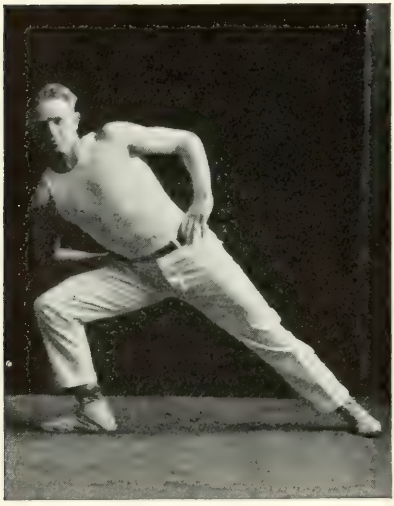


FIG. 46

FIG. 47

59. "Right (left) foot lunged backward—Place." The indicated foot is placed backward as far as possible from its normal position. The foot points forward-oblique. The knee of the displaced leg is almost fully bent. The stationary leg is fully extended with the heel raised. The trunk is inclined backward in a direct line with the stationary leg. The weight of the body rests wholly on the displaced foot. Eyes directed to the front. (Fig. 47.)

60. "Right (left) foot lunged forward-oblique—Place." The indicated foot is placed forward-oblique (halfway between forward and sideward) as far as possible from its normal position.

The foot points forward-oblique. The knee of the displaced leg is almost fully bent. The stationary leg is fully extended with the heel raised. The trunk is inclined forward-oblique in direct line with the stationary leg. The weight of the body rests wholly on the displaced foot. Eyes directed to the front.

61. "Right (left) foot lunged backward-oblique—Place." The indicated foot is placed backward-oblique (halfway between backward and sideward) as far as possible from its normal position. The foot points forward-oblique. The knee of the displaced leg is almost fully bent. The stationary leg is fully extended. The trunk is inclined sideward-oblique in direct line with the stationary leg. The weight of the body rests wholly on the displaced foot. Eyes directed to the front.

62. "Right (left) foot normal—Place." The normal position of the foot. The indicated foot rests on the floor, parallel to, and alongside of, the other.

63. "Feet apart—Place." This position is taken by a jumping movement. The feet are separated two foot lengths laterally. Feet parallel and straight to the front. Weight equally distributed on both feet. (Fig. 41.)

64. "Feet wide apart—Place." This position is taken by a jumping movement. The feet are separated laterally as far as it is conveniently possible. (Usually from three to four foot lengths.) Feet parallel and pointed straight to the front. Weight equally distributed on both feet. (Fig. 48.)

65. "Feet stride right (left)—Place." This position is taken by a jumping movement. The feet are separated two foot lengths, anteroposterially. (A space of one foot length separates the toe of one foot and the heel of the other.) The indicated foot moves forward, the other foot backward. Feet point straight to front. Weight equally distributed on both feet. (Fig. 40.)

66. "Feet normal—Place." The normal position of the feet, Feet together and parallel. This position is secured by a jumping movement.

VII. FUNDAMENTAL ON-FLOOR POSITIONS

All of the fundamental positions of the arms and legs are used quite naturally in the reclining positions. In all of the positions, with the exception of the squatting positions, there are a few addi-

tional positions of the arms and legs. These additional accessory positions are given in connection with the following catalogue of the fundamental reclining positions.

67. "Squat on floor, knees apart—Place." The knees are fully bended and spread at an angle of forty-five degrees. The arms are inside of the knees. The hands are placed on the floor, palms down. Fingers are turned straight forward. Eyes directed to the front. Weight rests mainly on the feet. (Fig. 49.)

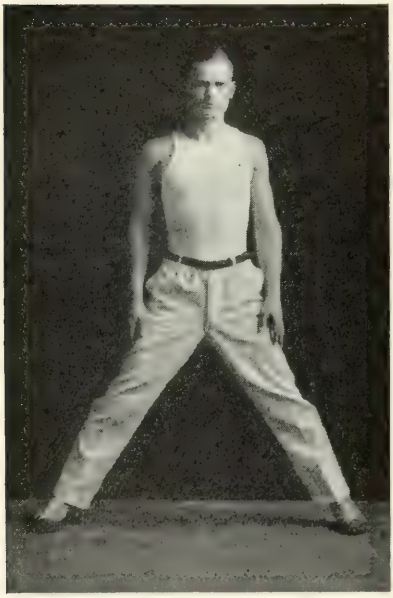


FIG. 48

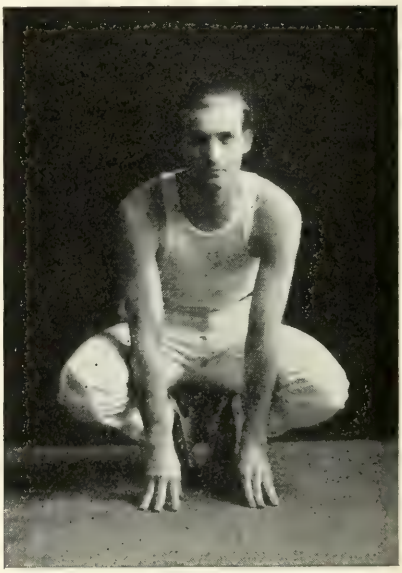


FIG. 49

68. "Squat on floor, knees together—Place." Knees are fully bended and held together. The arms are outside of the knees. The hands are placed on the floor, palms down. Fingers are pointed straight forward. Eyes are directed to the front. Weight rests mainly on the feet. (Fig. 50.)

69. "Seat on floor—Place." Sitting on the floor. Legs parallel, together and straight to the front. Knees straight. Hands on floor at side (not back) of hips; palms down. Fingers pointed forward. Head and trunk erect. Abdomen drawn in. Eyes directed to the front. (Fig. 51.)

(a) "Hands on floor back of buttocks—Place." Hands placed

on the floor twelve inches in back of the buttocks, shoulder-width apart. Fingers pointed backward. (Fig. 52.)

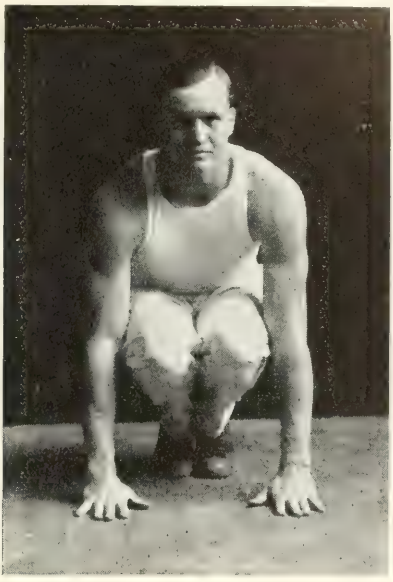


FIG. 50

(b) "Hands on toes—Place." Trunk bent forward. Fingers placed on the tips of the toes. (Fig. 53.)

FIG. 51

FIG. 52

(c) "Hands normal—Place." Normal position of the hands. Hands on floor at side of hips; palms down. (No weight should rest on the hands.)

(d) "Right (left) foot at buttocks—Place." The indicated leg is fully bent at the knee. The indicated foot rests on the floor close to the buttock. (Fig. 54.)

(e) "Right (left) foot normal—Place." The normal position of the indicated foot.

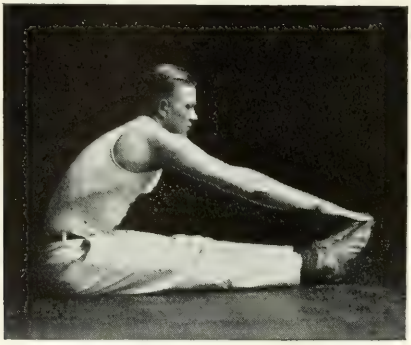


FIG. 53

(f) "Feet at buttocks—Place." The feet are placed on the floor near the buttocks. Knees bent and together. Feet together.

(g) "Feet one inch off floor—Place." Feet are held one inch from the floor. Knees straight. Toes pointed.

FIG. 54

(h) "Feet upward—Place." Legs are held as high off the floor as possible. Knees straight. Toes pointed. (Fig. 55.)

(i) "Feet normal—Place." The normal position of the feet and legs. Legs parallel together, and straight to the front. Toes pointed.

(j) "Feet apart—Place." This position may be taken from any of the three positions in which the feet are held together; namely, feet normal, feet one inch off floor, feet upward. In all

FIG. 55

cases they retain the degree of elevation held at the time the command is given. For instance, if the command were given while the feet were one inch off the floor, they would be separated and held one inch off the floor. Legs separated. Feet as far apart as comfort permits. Knees straight. Toes pointed. (Fig. 56.)

FIG. 56

(k) "Feet together—Place." This position may be taken from any of the three positions in which the feet are held apart; namely, feet normal, feet one inch off floor, feet upward. In all cases they retain the same degree of elevation held at the time the command is given. For instance, if the command were given while the feet were upward they would be separated and held upward. Legs together. Knees straight. Toes pointed.

(1) "Feet on floor—Place." This command is used when the feet are held apart in any of the elevated positions (feet one inch off floor, feet half upward) and the instructor wants them placed in the spread position on the floor. The legs are spread as far as conveniently possible, with the heels resting on the floor. Knees stiff. Toes pointed.

70. "Chest on floor—Place." An extended pronated position, commonly known as lying on the stomach. Chest, stomach, pelvis, thighs, knees, and toes (not instep) resting on the floor. Head elevated; chin drawn in. Knees straight. Feet parallel and together. Arms resting along the sides of the body. Hands pressed against the outside of the thighs with palms in; back of thumbs resting on the floor. (Fig. 57.)

FIG. 57

Note:—The normal position of the hands when placed sideward or upward in this position is on the floor. In placing the hands in any of these positions they should be so placed. On the other hand, they may be raised from the floor by the following command. When they have been raised from the floor, however, the sideward and upward positions are taken with the hands raised until they have been ordered back on the floor.

(a) "Hands off floor—Place." This position may be taken from either the hands sideward or hands upward position. The hands are raised as high as possible. Elbows straight. Fingers extended and joined. (Fig. 58.)

(b) "Hands on floor—Place." This position may be taken from either the hands sideward or hands upward position. The

hands are placed on the floor. Elbows straight. Fingers extended and joined. Palms down.

(c) "Hands under shoulders on floor—Place." Hands, palms down, resting on the floor directly under the shoulders. Fingers pointed forward. Elbows close to sides. (Fig. 59.)

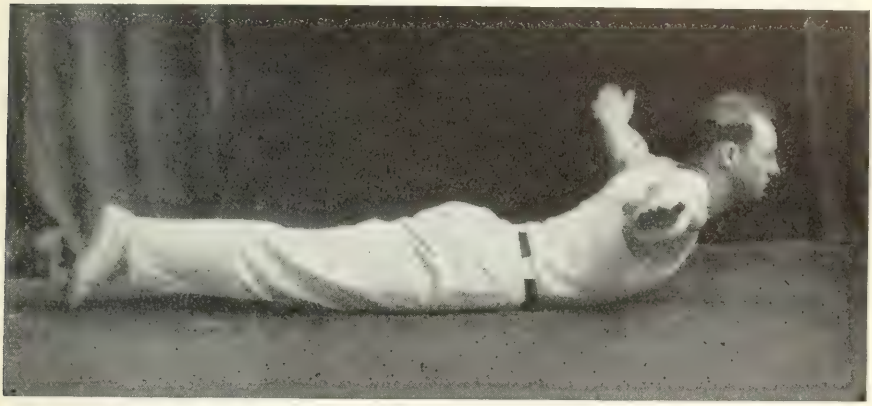


FIG. 58

(d) "Hands normal—Place." The normal position of the hands. Arms resting along the sides of the body. Hands pressed against the outside of the thighs. Palms in. Back of thumbs resting on the floor.

FIG. 59

(e) "Feet off floor—Place." Knees stiff, feet held off the floor as high as possible. Toes pointed. (Fig. 60.)

(f) "Feet normal—Place." The normal position of the feet. Knees straight. Feet together and parallel. Toes resting on the floor.

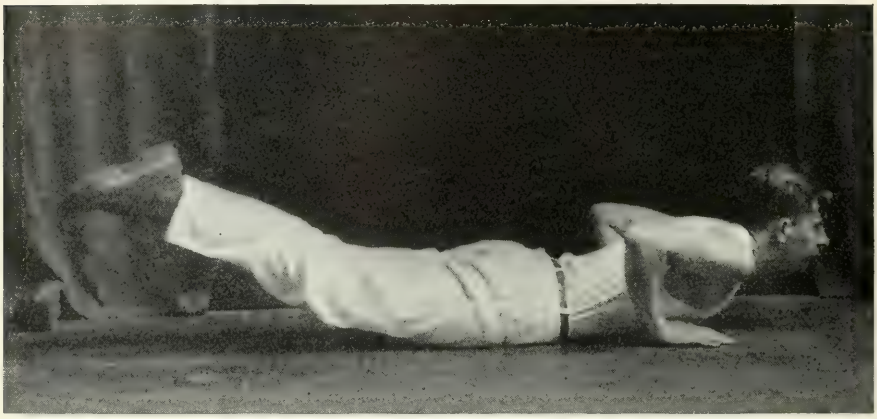


FIG. 60

71. "Back on floor—Place." An extended supinated position, commonly known as lying on the back. Heels, calves, thighs, buttocks, upper back and back of head resting on the floor. Feet parallel and together. Knees straight. Toes pointed. Arms resting along the sides of the body. Hands touching thighs; little finger side of hand resting on the floor. (Fig. 61.)

FIG. 61

(a) "Hands under buttocks—Place." Hands, palms down, placed close to the sides of the buttocks so the buttocks are snugly cupped between them.

(b) "Hands normal—Place." The normal position of the hands. Arms resting along the sides of the body. Hands pressed against the thighs. Little finger side of hand resting on the floor.

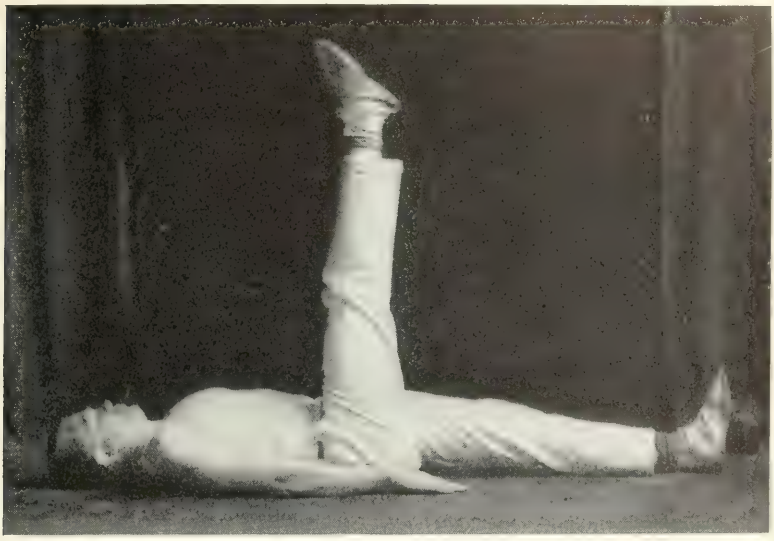


FIG. 62

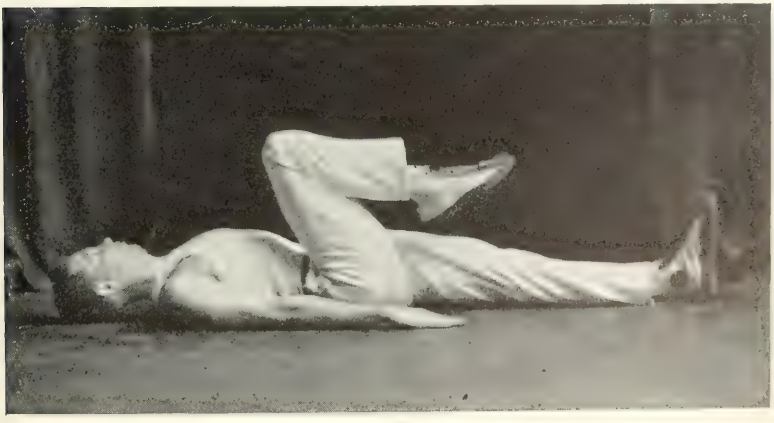


FIG. 63

(c) "Right (left) foot upward—Place." The indicated leg is held in a vertical position. Knee straight. Toe pointed. (Fig. 62.)

(d) "Right (left) knee at chest—Place." The indicated knee is drawn to the chest. Knee fully bent. Toe pointed. (Fig. 63.)

(e) "Right (left) foot normal—Place." The normal position of the foot. Knee straight. Heel resting on the floor.

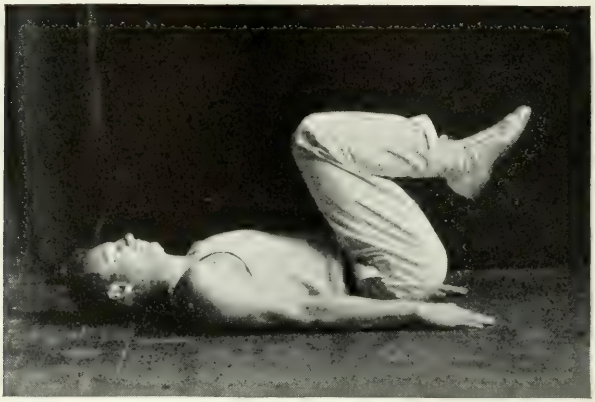


FIG. 64

(f) "Knees at chest—Place." Knees are drawn to the chest. Knees fully bended and together. Feet together. Toes pointed. (Fig. 64.)

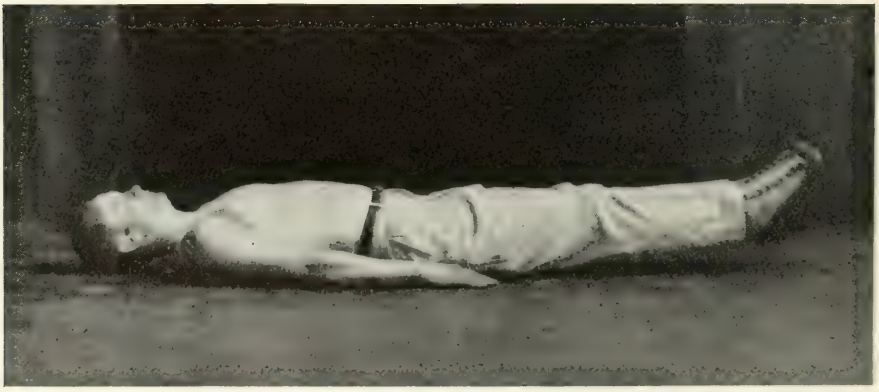


FIG. 65

(g) "Feet one inch off the floor—Place." Feet are held one inch from the floor. Knees straight. Toes pointed. (Fig. 65.)

(h) "Feet half upward—Place." Legs are held at an angle of forty-five degrees from the floor (halfway between the floor and a vertical position). Knees straight. Toes pointed. (Fig. 66.)

(i) "Feet upward—Place." Legs are held vertical. Knees straight. Toes pointed. (Fig. 67.)

FIG. 66

(j) "Feet backward—Place." Legs are held as far back from the vertical position as the exerciser can while retaining the hips on the floor. This is usually around four or five inches beyond the upward position. Knees straight. Toes pointed. (Fig. 68.)

FIG. 67

FIG. 68

(k) "Feet normal—Place." The normal position of the legs. Feet parallel and together. Knees straight. Heels resting on the floor.

(l) "Feet apart—Place." This position may be taken from any of the five positions in which the feet are together; namely, feet normal, feet one inch off floor, feet half upward, feet upward and feet backward. In all cases they retain the degree of elevation held at the time the command is given. For instance, if the command were given while the feet were on the floor they would be separated and placed on the floor. Legs separated. Feet as far apart as comfort permits. Knees straight. Toes pointed. (Fig. 69.)

FIG. 69

(m) "Feet together—Place." This position may be taken from any of the five positions in which the feet are held apart; namely, feet normal, feet one inch off floor, feet half upward, feet upward and feet backward. In all cases they retain the degree of elevation held at the time the command is given. For instance, if the feet are half upward they are brought together half upward. Legs are parallel and together. Knees straight. Toes pointed.

(n) "Feet on floor—Place." This command is used when the feet are held apart in any of the elevated positions (feet one inch off the floor, feet half upward, feet upward, and feet backward), and the instructor wants them placed in the spread position on the floor. The legs are spread as far as conveniently possible with the heels resting on the floor. Knees stiff. Toes pointed.

72. "Front support—Place." The body, face down, is supported on hands and toes. The legs, feet together and knees

straight, are extended backward. The trunk, legs, and head are held in a straight line. The hands, palms down, are placed parallel with the shoulders. Elbows straight. Fingers together and pointed forward. Eyes directed to the front. (Fig. 70.)

FIG. 70

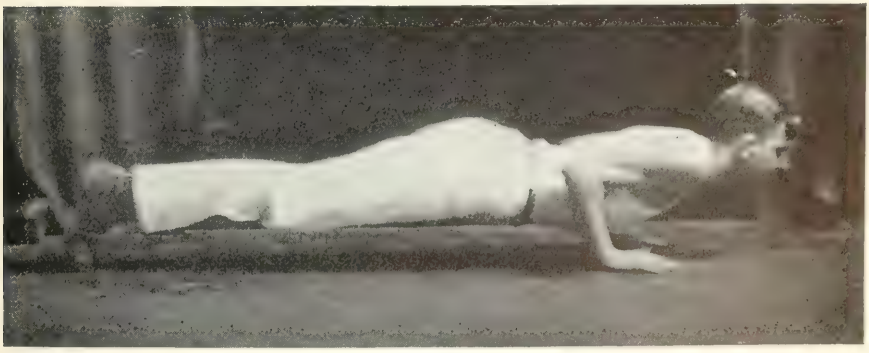


FIG. 71

73. "Low front support—Place." The body, face down, is supported on the hands and toes. The legs, feet together and knees straight, are extended. The trunk, legs and head are held

straight over their entire length. The hands, palms down, are placed parallel with the shoulders. Fingers pointed forward. The elbows are bent so the chest is held an inch or two off the floor. The elbows are held close to the side. Eyes directed to the front. (Fig. 71.)

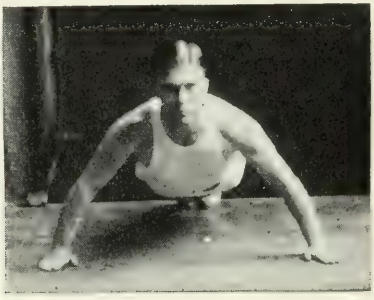


FIG. 72

The following derived positions may be used with both the front support and the low front support positions:

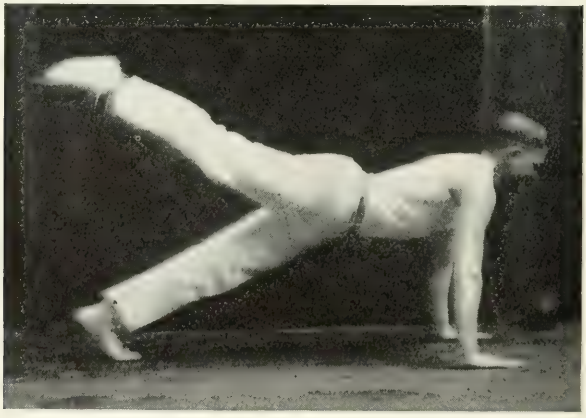


FIG. 73

(a) "Hands apart—Place." This position is taken by a jumping movement. The hands, resting on the floor, palms down, are separated as far as conveniently possible. (Fig. 72.)

(b) "Hands normal—Place." The normal position of the hands. Secured by a jumping movement. The hands, palms down, rest on the floor shoulder-width apart.

(c) "Right (left) foot upward—Place." The indicated foot is raised as high as possible. Knees straight. Toes pointed. (Fig. 73.)

FIG. 74

(d) "Right (left) foot normal—Place." The normal position of the indicated foot.

(e) "Feet apart—Place." This position is taken by a jumping movement. The legs are separated as far as convenience permits. Toes rest on floor. Knees straight. (Fig. 74.)

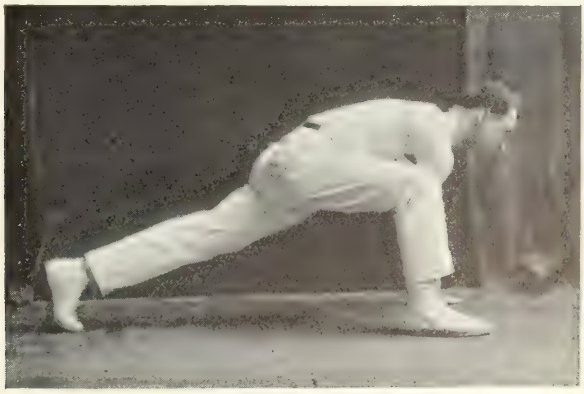


FIG. 75

(f) "Feet normal—Place." The normal position of the feet. Secured by a jumping movement. The legs, parallel and together, are extended backward. Toes rest on the ground.

(g) "Right (left) foot at right (left) hand—Place." The indicated foot is placed outside of the indicated hand. The knee of the displaced leg is bent. The toe of the displaced foot rests on the floor outside of the hand. (Fig. 75.)

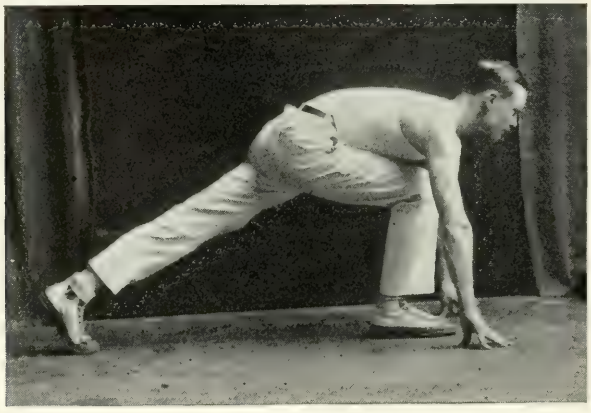


FIG. 76

(h) "Right (left) foot between hands—Place." The indicated foot is placed at a point as nearly between the hands as possible. The knee of the displaced foot, fully bent, is drawn close to the chest. (Fig. 76.)

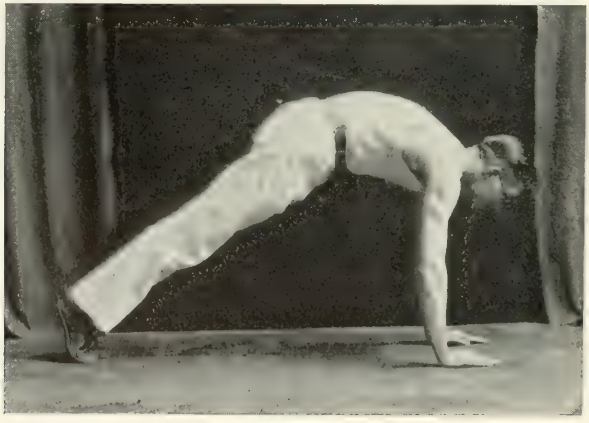


FIG. 77

(i) "Right (left) foot normal—Place." The normal position of the indicated foot.

(j) "Hips upward—Place." The hips are raised as high as possible. The back is arched. (Fig. 77.)

(k) "Hips downward—Place." The hips are lowered to a point two or three inches off the floor. The back is concave. (Fig. 78.)

FIG. 78

(l) "Hips normal—Place." The normal position of the hips. The trunk and legs are held in a straight line.

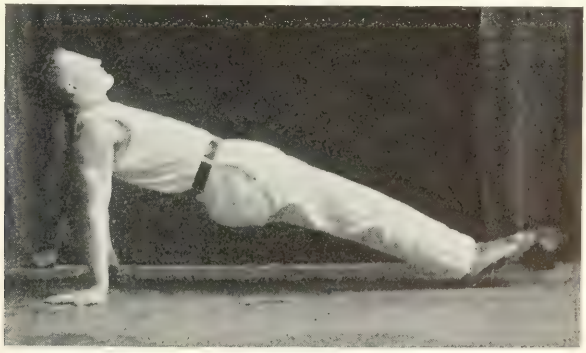


FIG. 79

74. "Back support—Place." The body, back down, is supported on the hands and heels. The legs, feet together and knees straight are extended forward. The trunk, legs and head are in a direct line. The chest is held high. The hands are placed parallel with the shoulders. Fingers extend backward. Elbows straight. Eyes directed to the front. (Fig. 79.)

75. "Low back support—Place." The body, back down, is supported on the hands and heels. The legs, feet together and knees straight, are extended forward. The chest is held high. The hips are held an inch or two off the floor. The hands are placed parallel with the shoulders. Fingers extended backward. Elbows straight. Eyes directed to the front. (Fig. 80.)

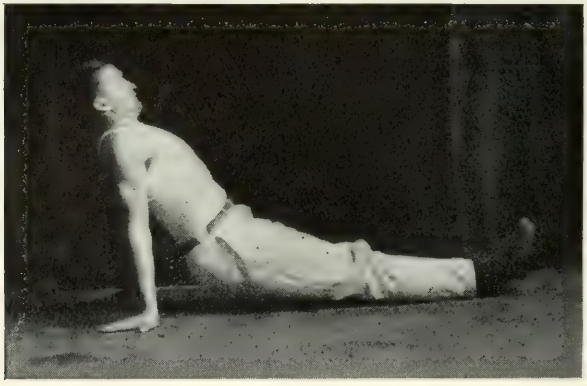


FIG. 80

The following derived positions may be used with both the back support and the low back support positions:

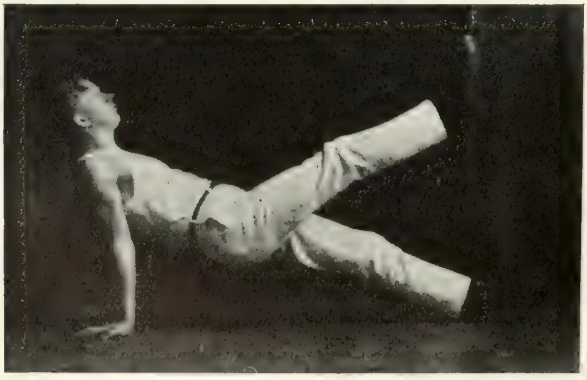


FIG. 81

(a) "Right (left) foot upward—Place." The indicated foot is raised as high as possible. Knee straight. Toe pointed. (Fig. 81.)

(b) "Right (left) foot normal—Place." The normal position of the indicated foot.

(c) "Feet apart—Place." The feet are spread apart as far as comfortable. Knees straight. Heels on floor. This position is secured by a jumping movement. (Fig. 82.)

FIG. 82

(d) "Feet normal—Place." The normal position of the feet. The legs with feet together and knees straight are extended forward. Heels rest on the floor. This position is secured by a jumping movement.

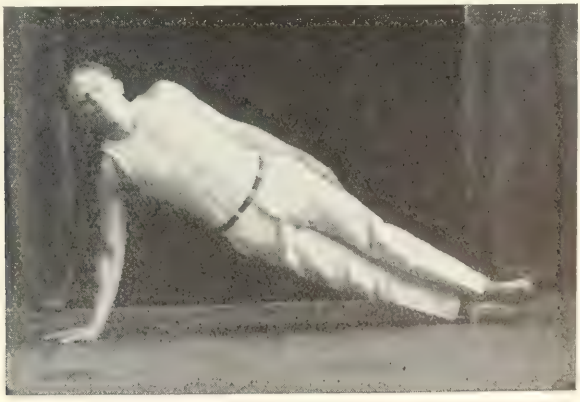


FIG. 83

76. "Right (left) side support—Place." The body, indicated

side down, is supported on one hand and one foot. The legs, feet together and knees stiff, are extended. The supporting foot rests side down. The trunk, legs, and head are held straight over their entire length. The supporting arm is straight. The hand of the supporting arm rests on the floor, palms down, fingers to the front. The other arm rests along the side of the body; the hand, palm in, rests against the thigh. (Fig. 83.)

FIG. 84

77. "Low right (left) side support—Place." The body, indicated side down, is supported on one hand and one foot. The legs, feet together and knees stiff, are extended. The supporting foot rests with the outside on the floor. The lower hip is held an inch or two off of the floor. The supporting arm is straight. The trunk is inclined, bending at the hip. The hand of the supporting arm rests on the floor, palms down, fingers to the front. The other arm rests along the side of the body; the hand, palm in, rests against the thigh. (Fig. 84.)

The following derived position may be used with both the side support and low side support positions:

(a) "Right (left) foot upward—Place." The indicated foot is raised as high as conveniently possible. Knee straight. Toe pointed. (Fig. 85.)

(b) "Right (left) foot normal—Place." The normal position of the foot. Knee straight.

78. "Front elbow support—Place." The body, face down, is supported on the forearms and toes. The legs, feet together

and knees straight, are extended backward. The trunk, legs and head are held in a straight line. The elbows are held shoulder width apart. The hands (palms down) and forearms are pointed forward. Eyes directed to the front. (Fig. 86.)

FIG. 85

(a) "Right (left) foot upward—Place." The indicated foot is raised as high as possible. Knees straight. Toes pointed.

(b) "Right (left) foot normal—Place." The normal position of the indicated foot.

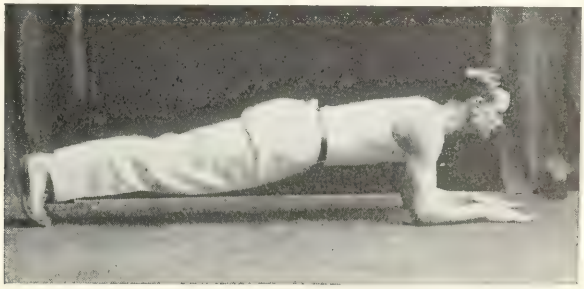


FIG. 86

(c) "Feet apart—Place." The position is taken by a jumping movement. The legs are separated as far as convenience permits. Toes rest on the floor. Knees straight.

(d) "Feet normal—Place." The normal position of the feet. Secured by a jumping movement. The legs, parallel and together, are extended backward. Toes rest on the ground.

79. "Back elbow support—Place." Sitting on the floor. Legs parallel, together and straight to the front. Knees straight. Trunk inclined backward at an angle of about thirty degrees from the floor. Elbows, forearms and hands resting on the floor behind the hips. Forearms and hands (palms down) pointing forward. Chest up. Weight resting on legs, seat and elbows. (Fig. 87.)

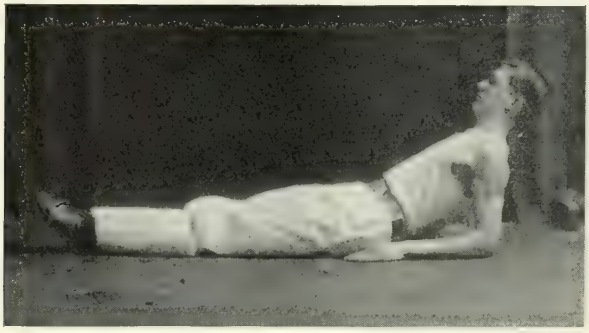


FIG. 87

(a) "Right (left) foot upward—Place." The indicated leg is held in a vertical position. Knee straight. Toe pointed.

FIG. 88

(b) "Right (left) knee at chest—Place." The indicated knee is drawn to the chest. Knee fully bent. Toe pointed. (Fig. 88.)

(c) "Right (left) foot normal—Place." The normal position of the foot. Knee straight. Knee resting on the floor.

(d) "Knees at chest—Place." Knees are drawn to the chest.

Knees fully bent and together. Feet together. Toes pointed. (Fig. 89.)

(e) "Feet one inch off floor—Place." Feet are held one inch from the floor. Knees straight. Toes pointed.

(f) "Feet half upward—Place." Legs are held at an angle of forty-five degrees from the floor (halfway between the floor and a vertical position). Knees straight. Toes pointed.

(g) "Feet upward—Place." Legs are held vertical. Knees straight. Toes pointed. (Fig. 90.)

FIG. 89

FIG. 90

(h) "Feet normal—Place." The normal position of the legs. Feet parallel and together. Knees straight. Heels resting on the floor.

(i) "Feet apart—Place." This position may be taken from any of the four positions in which the feet are together, namely, feet normal, feet one inch off floor, feet half upward, and feet upward. In all cases they retain the degree of elevation held at the time the command is given. For instance, if the command were given while the feet were on the floor they would be separated and placed on the floor. Legs separated. Feet as far apart as comfort permits. Knees straight. Toes pointed.

(j) "Feet together—Place." This position may be taken from any of the four positions in which the feet are held apart, namely, feet normal, feet one inch off floor, feet half upward and feet upward. In all cases they retain the degree of elevation held

at time the command is given. For instance, if the feet are half upward they are brought together half upward. Legs parallel and together. Knees straight. Toes pointed.

(k) "Feet on floor—Place." This command is used when the feet are held apart in any of the elevated positions (feet one inch off the floor, feet half upward and feet upward) and the instructor wants them placed in the spread position on the floor. The legs are spread as far as conveniently possible with the heels resting on the floor. Knees stiff. Toes pointed.

VIII. REGAINING STANDING POSITION

To put the exercises in the fundamental standing position from any of the reclining positions—seat on floor, back support, chest on floor, etc.—the following command is used:

80. Stand erect—Stand." The normal standing position. Each pupil assumes this position according to his own wishes, the only requirement being that each shall move with all possible speed.

CHAPTER V

METHODS OF EXERCISING

Calisthenic exercises may be conducted and executed in several different ways. On top of this it so happens that each exercise type is best executed in a certain specific way and further that certain methods of exercising are best for certain groups. Given the lesson plan and a definite class, the outstanding technical problem facing the instructor is, "What general method of exercising is best for this class and what specific method is best for each exercise?" Before attempting to answer this it seems advisable to outline the several methods used and discuss in a brief way the advantages and disadvantages of each.

Calisthenics, under different conditions, are carried on by nine distinct methods:

1. By command.
2. By the numbers.
3. In rhythm.
4. In cadence.
5. Multi-rhythm.
6. Multi-cadence.
7. Combination.
8. Eurhythmic
9. At will.

I. BY COMMAND

The command method consists of telling the class what to do and when to do it; it involves a command of direction and a command of execution, as, (1) "Hands forward—pause—(2) Place." The directory command both informs the exercisers of an intended change and indicates the new position; the short pause gives the command an opportunity to "sink in"; and the executory command signals the class to make the change.

(a) Method of Use

To conduct a class by this method the exercisers have to be familiar with the terminology or the names of the various positions. The method of procedure is as follows: The instructor names the first position and places the exercisers in it. After they

have held this position for a short period (two, four, six, ten, or more seconds, at least long enough for the instructor to inspect the exercisers and correct the outstanding faulty positions) he calls the next position. After this is taken and held for a time (long enough to inspect and correct the positions again) he calls the next. In this manner the work continues; the exercisers, by command, are placed in the several successive positions of the exercise.

(b) Positions Should be Held

It so happens that some of the positions taken make for posture and some do not. The class should be held in the so-called non-postural positions only so long as it takes to inspect the majority of the class and rectify the more faulty positions; all that is wanted in positions of this type is for the exercisers to get the "feel" of the correct position. This ordinarily requires from two to six seconds. There is no necessity for holding such positions longer. Posture-making positions, however, for the purpose of "setting" the parts may be held for longer periods—in some cases they may be held for ten or fifteen seconds. In this manner the exercising continues; the instructor holds the class in each position over varying periods of time.

(c) Concerning Signals

In using this method the first command should be given in clear-cut tones, loud enough for all to hear; the second command should be given with a rising inflection, sharp and biting so that the pupils feel as well as hear it. Care should be taken that the pause between the commands is sufficiently long for the exercisers to grasp the meaning of the preliminary order; if the interval is not sufficiently long, response will be disordered and inaccurate. In view of the fact that the command method is purely a response method it is not necessary to definitely halt the class when the instructor wishes to discontinue an exercise. He merely ceases to repeat the signals or introduces new ones; either automatically finishes the exercise in use.

(d) Example of Procedure

The following description, characterizes, in a general way, how this method is used:

"Hands sideward—Place." Instructor surveys the class, makes a few general corrections, and corrects a few of the students individually. This being a postural position, he has the class hold it fairly long—5–8 seconds.

"Hands forward—Place." Instructor looks over the class, calls, "Shoulders back," and corrects one or two individuals standing near. Not being a postural position, he has the class hold this position for rather a short period of time—3–5 seconds.

"Hands sideward—Place." Instructor inspects the class, makes one or two general corrections, calls, "Abdomen in," makes an individual correction or two, and then after the position has been held for a comparatively long time—5–8 seconds—calls for the next position.

"Hands normal—Place." Instructor looks at the class meaningfully and says, "Let's put a little more energy in it," and immediately gives the first command again.

In this manner the exercise is repeated as frequently as desired. In the succeeding repetitions the instructor varies the length of time for holding each position and varies his coaching procedures. After the positions have been learned, of course, the intervals of time for holding the positions should be reduced.

(e) Advantages of Command Method

The command method is one of the distinguishing features of the Swedish system of gymnastics. The particular advantages of exercising by this method are four in number.

1. It has splendid disciplinary values. To assume the various positions correctly and at the precise moment the exercisers must attend closely to the instructor; properly managed, there is no opportunity for inattention or monkeyshines. This condition makes for excellent disciplinary results.

2. It is the most precise method for teaching and executing exercises. Each position is definitely taken and held while needed corrections are made. The exercisers thus get the exact feel of the positions and better execution invariably results.

3. It is the most effective method for executing posture-making exercises. Through holding the so-called postural positions (positions which especially exercise the muscles actively engaged in good

posture) good posture is vigorously developed. And further by holding these positions we tend to "set" the parts as no other method of exercising does. This continued muscle tension tends to establish a kind of tetanus which is quite permanent in its effect. Further, the prolonged stretching of those muscles which are opposed to good posture has the effect of moderating their tension so they do not exert a constant pull against good carriage of the various parts involved.

4. It tends to develop general physical agility. Through requiring the exercisers to take specific positions at momentary notice with all possible speed, this method of exercising develops localized motor control, rapid reaction time, and precision—qualities summarized under the broader heading of physical agility.

(f) Objections to Command Method

There are three objections very frequently raised against this method of exercising.

1. First, it is often stated that there is but little hygienic value to this type of work. It is felt that since there is, comparatively, less movement when working by this method than by any of the other methods, there is less organic stimulation. Actual experiment, however, partially contradicts this; it depends on the exercise and the way in which the exercise is performed. Exercises involving the holding of strained positions, such as trunk half lowered, trunk lowered, foot raised forward, and trunk turned right are, to a high degree, productive of organic reaction. And with reference to the manner of performance, if the exerciser does his work well, that is, makes each movement rapidly and holds each position energetically, the degree of organic reaction is much higher than ordinarily believed.

2. This leads us into a discussion of the second objection, namely, that exercises carried on this way are laborious and uninteresting. On this score alone a great number of instructors are opposed to this method of work. But is this attitude justified? Where attendance is voluntary it may be advisable to follow the likes and dislikes of the exercisers, but where attendance is compulsory, as it is in school and college, this argument certainly does not hold water. There is no disputing the fact that exercising by this method is real serious work; holding the various positions

cannot, by any stretching of the imagination, be considered play. To discard a method of work because it is uninteresting, however, is violating one of the first principles of education. The likes and dislikes of the pupils should not be the dominating criterion in framing our physical education program; the needs of the students is the factor that should determine this.

But is this work uninteresting? This depends to a large extent on the skill of the instructor. Under poor direction, unquestionably, it is uninteresting, but the facts are that under poor leadership any kind of work is uninteresting. The logical answer to this criticism may be sought in the field of expert experience. From this point of view we are justified in saying that under able direction this work may become quite interesting, at least palatable.

In the Scandinavian countries where exercising by this method is governmentally endorsed and teachers of gymnastics have a relatively high degree of training, this work, as the writer can attest from personal investigation, is taken quite gracefully. In this country, however, where the proportion of expert instructors is relatively small, it is uninteresting and distasteful. Under the direction of the few capable instructors who used this method, though, as in Scandinavia, this work is not considered as being totally unpleasant.

3. A third objection to this method of exercising is that it exacts a high degree of nervous tension and strain. To work well by this method the exercisers must be constantly alert and attending; they must be ever alert to the instructions of the teacher and constantly attend to their own positions. To take and hold the various positions, there must be a steady flow of nervous impulses which, if long continued, tends to become exhausting; the individual is not muscularly exhausted but nervously exhausted. Several experiments which have been carried on in this field show that nervous tissue fatigues much more rapidly than muscular tissue. The command method is particularly opposed in school on these grounds. The argument given is that the mental work done by the children in their other studies: geography, history, arithmetic, and so on, is mainly nervous and straining; our physical training program should afford relief from this rather than add to it. This criticism is perhaps partially justified.

Physical training, however, has many aspects; it may be relaxa-

tional as well as developmental. If the need is for relaxation then we should resort to those measures which most adequately provide relaxation. On the other hand, if we want our work to be developmental we must use the most effective means we know of, and if those means include the command method then we should provide for and use it. As it works out in actual practice, though, while this method of conducting a drill is exhausting to beginners it is not nearly so fatiguing after the first few lessons. In the beginning the exercisers work awkwardly, and futilely activate and inhibit scores of nerves totally disassociated with the activity wanted. As skill increases only those nerves directly interested in the action are used; the individual thus conserves his nervous energy. Also in the beginning consciousness is highly focussed on the parts involved. Conscious attention is very exhausting. As skill increases direction of the various activities is gradually removed from the cerebral centers and becomes localized in the cerebellar and spinal centers. In time auditory-motor reflexes are developed; this, combined with perfected coördination, has the effect of cutting down nervous fatigue.

In actual fact, though, these criticisms have grown out of an over usage of this method of conduct—the practice of using it for the entire lesson. In cases of this sort the criticisms are more fully justified. According to the best modern practice, however, the command method is used only rarely; so in the final analysis we do not have to give them special consideration.

II. BY THE NUMBERS

All exercises used in the calisthenic drill are made up of a specific number of movements, or from another standpoint, positions. Therefore, in a given exercise the various positions may be numbered. For instance:

Hands forward—Place=One
Hands sideward—Place=Two
Hands forward—Place=Three
Hands normal—Place=Four

To exercise by the command method the signals are "Hands forward—Place," "Hands sideward—Place," and so on. Now, to execute an exercise by the number method it is only necessary to

substitute the number for the command. Of course, a class must know an exercise before it can perform by this method, but after this has been made known the instruction is exceedingly simple.

(a) Method of Use

Exercising by the numbers, thus, is merely a simplification of the command method. In fact, done properly the time intervals are about the same as those one has when working by the command method. To conduct a class by this method the instructor says, "By the numbers," and then after a brief pause calls, "One." On this signal the class takes the first position. After holding it for four or five seconds the instructor calls, "Two." The class takes the second position. After six or eight seconds the instructor calls, "Three." Six seconds later he calls, "Four." Two seconds later he calls, "One," again. In this manner the instructor continues the exercise as he wishes. If it is a two-count exercise he should count, "One-Two-One-Two," etc.

The counting should be slow enough to allow each of the exercisers to secure and hold each position and give the instructor an opportunity to examine and correct the positions taken. And above all things, it should be irregular; all semblance of rhythm should be avoided. As when using the command method the non-postural positions should be held just long enough to make the work decidedly definite and irregular, but the good postural positions should be held for longer periods for the purpose of getting increased postural benefits.

While as stated before, the intervals between the counts should be slow and irregular, the counting should be snappy and intense. The instructor should set the standard that all movements by the exercisers should be made briskly (over the shortest possible route in the shortest possible time) excepting when specifically instructed otherwise; so for the purpose of spurring the exercisers into a proper performance, the signal for execution should be given with real snap and energy. Being, like the command method, response in nature, an exercise conducted by this method does not have to be halted. When the instructor wishes to discontinue it he stops counting and says, "At ease," "At rest," or introduces the signals for a new exercise and the class does as directed.

(b) Effects Similar to Command Method

As pointed out before, the number method in actual practice is exactly identical with the command method, the only difference being the substitution of numbers for descriptive commands. For this reason the advantages and disadvantages pointed out in connection with the number method are equally applicable here.

(c) Advantages Over Command Method

Directing a class by the number method, however, has two advantages over the command method. Briefly these are as follows:

1. The commands are reduced to a minimum, Instead of commanding, for instance, "Hands sideward, left foot backward, trunk forward—Place," the instructor commands, "One," and then instead of, "Hands normal, feet normal, trunk normal—Place," the instructor commands, "Two." By shortening the commands in this manner, more time and opportunity is given the instructor for making corrections. Instead of worrying over the complications of nomenclature he can apply his efforts to the needs of the class, correcting positions, getting snappy reactions, etc. It also serves to save the instructor's voice—an item not to be ignored, especially if the instructor is called upon, as some are, to lead three or four classes a day.

2. Classes as a rule like this method better than the command method. The long descriptions necessary in the command method, without question are boresome and tiring. Besides, the object of free exercising is "physical gymnastics" and not "mental gymnastics." When the exerciser has to attend to the nomenclature instructions of the instructor for long periods of time his thinking tends to become objective rather than subjective or his mind begins to wander; in either case the tendency is to neglect the more vital factors of posture, snap and precision. All in all it can be accepted as a maxim that whenever possible the number method should be given preference over the command method.

III. IN RHYTHM

The rhythm method is of all the methods the one most commonly used in this country and naturally the one with which the average individual is most familiar. It is a direct heritage of the

German system of gymnastics; this largely explains its popular usage.

(a) Method of Use

To conduct a class by this method the instructor first faces the task of acquainting the class with the exercises to be used. This may be done by means of a description or a demonstration. When this has been accomplished he calls, "In rhythm—Start." On the second command the class starts exercising, moving from one position to the next to the time set by the instructor. In a two-movement exercise they reach the first position on count "One" and the starting position on count "Two." In a four-count movement exercise they reach the first position on count "One," the second on count "Two," the third on "Three," and the starting position on "Four."

For the most part the counting should be, "One—Two—One—Two—One—Two," etc.. for a two-count exercise, and "One—Two—Three—Four—One—Two—Three—Four," etc., for a four-count exercise, as long as the instructor wishes to continue them. The counting should be regular and even. Counts given on good postural positions, however, for the sake of getting increased benefits, should be emphasized. In the exercise "Arms sideward, forward, sideward, normal," for instance, the counting should be "ONE—Two—THREE—four."

Clapping the hands, pounding the floor and similar devices have been used to mark time for this work, but for the most part these practices have been discarded. For the past few years the piano has been widely used with rhythm work and under certain conditions is very effective. The bulk of work carried on in the school, though, is conducted by counting.

Because of the nature of exercising by the rhythm method the work is carried on continuously; that is, the exercisers keep at it until definitely halted. The oscillatory or rebounding nature of rhythm exercising, however, prevents us from substituting a command in place of a number and get a stoppage on that number—the exercisers must be pre-warned and then stopped. The most effective method of halting a class working in rhythm is to substitute "Class—Stop" for the last two counts; the word "Class" warns the exercisers and they halt on the command "Stop."

(b) In Slow Rhythm

Certain exercises of the type which involves large muscular masses and comparatively wide movements, such as trunk raising while lying on the back, knee bending, lunging, and charging, when carried on by the rhythm method, are executed in unison by the average class, only with considerable difficulty. A new class, especially, has trouble in keeping together when going through such exercises. As ordinarily conducted, a great deal of benefit is lost through total disorganization at these times. The most effective way to forestall such unsatisfactory work is to have the class work more slowly.

Usually, exercises of this type follow an exercise which has been carried on with "snap and go" and the class automatically attempts to perform these in the same manner. The axiom, "Large bodies move slowly," applies to muscle masses as well as other things. A class will understand this when it is explained, but likewise the majority will forget it almost immediately. It is therefore necessary to remind them of this by inserting the word "slow" in the preparatory direction; thus in conducting exercises of this sort instead of using the usual, "In rhythm—Start," it helps considerably to change the signal to, "In rhythm—slow—Start." By this it is not intended that they are to deliberately dally along; it simply serves to call their attention to the fact that the exercise must be done more slowly and they must give greater heed to the time-setting (counting).

When using the rhythm method with a class of beginners or a newly organized group it is sometimes helpful to announce the desired rhythm before starting the class working. This should be done after the class has been instructed as to the nature of the exercise and just before the rhythm method is to be used. To make this announcement the instructor merely says, "In rhythm—(to this time—One—Two—Three—Four)—Start."

(c) Arguments Favoring the Rhythm Method

The rhythmic method of exercising has four outstanding advantages over all other methods; first, of all methods, it produces the greatest hygienic effect; secondly, of all methods, it is the most pleasant; thirdly, it is the natural way of exercising; fourthly, it is physiologically correct.

1. Let us discuss the hygienic aspect first. Through repeated experiments it has been proven that rhythmic exercising produces a greater heart rate increase, a greater respiratory increase, and a quicker and more thorough perspiration than any other type of exercising. This is due, it may be presumed, to the greatly increased foot-pounds of work done. It is quite impossible to measure all of the organic aspects of exercising, but it stands to reason that as between performing a given exercise two times or ten times in the same interval of time, the latter performance represents a much greater expenditure of energy than the former. This increase can hardly be said to advance in direct proportion to the number of repetitions, because in exercising by the command or number methods the held positions, especially the held strained positions and the held positions where a great load is carried, represent an additional expenditure of energy that has the effect of increasing the organic results. Leg raising, trunk lowering, and exercises involving the supports, for instance, produce nearly as large organic results when done by response as when done continuously.

2. Now let us take up the second character of rhythmic exercising, namely, pleasure. Rhythm seems to be a fundamental quality of the universe; it pervades all matter. Water flows rhythmically, winds blow rhythmically, birds flap their wings rhythmically, fish wave their tails rhythmically, animals run rhythmically, and so on. And, further, in the automatic functions of the organic body, heart action, lung action, digestive action, all operate on a rhythmic basis. I shall not go into a philosophical discussion of all of this, but it is a recognized fact that rhythm is a basic law of the universe. Its tentacles certainly permeate the human body. Artisans tend to reduce routine work to a rhythmic basis. Why do people dance? For the attitudes and poses they assume? Hardly. People dance for the satisfaction they find in rhythmic movement of the large muscle groups. Something in the body calls for rhythmic movement and gives us pleasure in experiencing it. It is because of this inherent quality that we find greater pleasure in exercising in rhythm than by any of the other methods.

3. The third argument favoring the rhythmic method is that it is the natural method of exercising. This point of view is particularly fathered by the followers of Demeny, a prominent French

investigator and worker in physical education, who sponsored it in the last years of his life. The argument hinges on the point that our natural activities call for movement not stasis; our muscles naturally function kinetically not statically; our movements are rhythmic not jerky; indefinite rather than definite; objective rather than subjective. In rowing, in fighting, in painting, in walking, in running and in every activity our movements are incomplete and irregular in range; they are only wide enough to meet the demands of the given situation. And, further, we rarely, if ever, hold our bodies in fixed positions; the various parts are in constant indefinite movement. These facts should give us the cue for selecting our method of exercising.

4. In addition to arguing that the rhythmic method is the natural one this group further points out that it is physiologically correct. The rhythmically alternated contraction and relaxation of muscles aids the blood flow thus facilitating metabolism and waste removal while prolonged contractions seriously interfere with this procedure and produce harmful results. Prolonged contractions are nervously fatiguing and intermittent contractions and relaxations are not, thence in another respect rhythmic exercising is preferable.

(d) Arguments Against the Rhythm Method

Viewed from the standpoint of precise and definite gyymnastics the rhythm method as ordinarily carried on has two very serious objections; the exercises are very poorly performed and the nature of the work does not lend itself to ready correction.

1. The exercisers swing through the drill performing with all degrees of perfection. In the average class only a very small percentage of the exercisers approach perfection. The great middle group perform quite inaccurately. And the work of a considerable portion is poor, if not decidedly bad. In a trunk lowering exercise done rhythmically, for instance, one notices many varieties of performance—some drop only part way, some arch the back, some keep it flat, and some let the shoulders droop. No two do it alike. The rapid oscillating nature of the work is responsible for this; it is very difficult for the exerciser to know when he is working inaccurately.

2. Added to this condition we find that it is very difficult to

coach and correct classes working in rhythm. In the first place it is difficult to determine exactly the grade of work being done. The constantly shifting picture makes this difficult. Besides, the instructor, preoccupied as he is with the detail of maintaining the proper timing, has little opportunity to check-up and correct poor performance. The best he can do is throw out an occasional suggestion.

IV. IN MULTI-RHYTHM

There are two principal manners of carrying on work by this method—two-count movements, and four-count movements. Any exercise may be carried on by either of them. In each, the positions are taken for the same period of time, but the movements are made over varying periods, varying, in fact, in direct proportion to the number of counts in the movement.

(a) Method of Use

The procedure of introducing and carrying on exercises by this method are essentially the same as those used in the straight rhythm method. Here, as in the previous method, the exercisers must first know the exercise. Any procedure outlined under methods of introducing exercises may be used for this purpose. Since the class is not likely to work in unison if the time is not known exactly it becomes necessary for the instructor to indicate the desired tempo. This may be done by going through the exercise and counting the desired time. When this is completed the instructor puts the class to work. To start the class exercising with two-count movements the instructor says, "In two-count rhythm—Start." Immediately after the command start has been given the instructor begins to count with a regular beat. On the same command the exercisers start moving for the first position gauging their movements so they reach it on count "Two." Then without delay they proceed in the same way to the second position, reaching it on count "Four." If the exercise has only two positions this is repeated; if it has four positions the instructor and exerciser proceed, reaching the third position on count "six" and the fourth on count "eight." Four-count movements are started by the command, "In four-count rhythm—Start." In this case the exercisers arrive at each position on the fourth count.

In counting for exercises done in two-count rhythm the instructor may count, "One—Two—One—Two," etc., or from one to eight. Two-position exercises done to four-count rhythms may be counted, "One—Two—Three—Four—One—Two—Three—Four," or from one to eight also; but four-count exercises done to four-count rhythms are best counted, "One—Two—Three—Four—One—Two—Three—Four." It is unhandy to count above ten as one would have to when following the other method. In counting for this type of work it is helpful if the instructor emphasizes the counts upon which the various positions are reached. In two-count rhythms this will be on every second count, in four-count rhythms on every fourth count.

Since this is a continuous method of exercising the class continues to work until definitely halted. The procedure of substituting, "Class—Stop," for the last two counts is recommended for this purpose.

(b) Discussion of Utility

Multi-rhythmic exercising differs from straight rhythmic exercising in two principal ways: (1) The movements are made more slowly, and (2) the positions are taken more definitely—the work is not so oscillatory. Because the movements are made more slowly, because the work is decidedly not of a vigorous nature, and because the positions are not taken hard, the foot pounds of work done is rather small and the organic results are correspondingly limited. This is not merely a theoretical statement, but one proved by actual experiment.

Since the movements are made more slowly, the exercisers do not bound or oscillate from one into another. This has the effect of permitting the exerciser to take the end positions more correctly. From a postural point of view, this makes multi-rhythmic exercising superior to straight rhythmic work. It is only in this respect, however, that this type of work offers any advantage over the more common method.

V. IN CADENCE

The cadence method, when considered from the standpoint of effects, is essentially a combination of the number and rhythm

methods, but when considered from the standpoint of performance it is only slightly different from the rhythm method. Here, as in exercising by all of the methods excepting the command method, the exercisers must know the exercise before work can be started.

(a) Method of Use

The cadence method of conducting a drill is as follows: Having acquainted the class with the exercise, the instructor, if it is a two-count exercise, calls, "In cadence—Start," and immediately proceeds to count, "One—Two—One—Two—One—Two," and so on. On the command of execution, the exercisers move as rapidly as possible to the first position, reaching it and vigorously holding it on count "one." Then moving rapidly they take their original position, which is secured and held in the same way, on count "two." The first position is then taken again. In this manner the class continues to exercise. Every movement is made as rapidly as possible and every position is held momentarily. If the exercise is one of four movements, the instructor calls, "In cadence—Start," as before, but counts, "One—Two—Three—Four—One—Two—Three—Four," and so on.

Counting for this type of exercising should be snappy and vigorous and by all means regular. In the command and number methods of conducting a class the positions are taken and held over periods of time that are definitely irregular. By the cadence method the positions are held for periods of time that are definitely regular. By the first two methods the positions are usually held over comparatively long periods of time (two to ten seconds); by the cadence method they are held over short periods of time (about one second—possibly a trifle less).

Cadence exercising like rhythm exercising is continuous, but owing to the fact that the positions are "definitely taken and held," it is possible to discontinue an exercise with a single command. The brief period for which the positions are held give us ample opportunity to put our inhibitors into action and definitely check further movement. To discontinue an exercise conducted by the cadence method, therefore, it is only necessary to substitute the word "Stop" in place of the number used to indicate the starting position. In a four count exercise, for instance, this would be, "One—Two—Three—Stop."

(b) Difference Between Rhythm and Cadence

The average class has considerable difficulty in distinguishing between the cadence method and the rhythm method; the best way to clarify this matter is to point out that the two methods are essentially alike excepting that in the rhythm method the positions are not held and in the cadence method they are held. If the positions are not held—and under poor instruction, they will not be, for a class very readily slips off into exercising by the rhythm method—the work ceases to be definite and loses its significance as cadence exercising. To insure the best cadence work, it is highly desirable that the class either know the exercise thoroughly or perform it a few times by either the command or number method before doing it in cadence. This is absolutely necessary with beginners. With well-trained classes and familiar exercises this procedure is not so essential.

(c) Key for Cadence Method

In the last paragraph it was pointed out that it is necessary for an instructor when conducting a class by the cadence method to be careful that the exercisers did not slip off into working by the rhythm method. Fortunately, we have a simple device which is an aid in checking up on this matter. This consists of halting the class at any of the positions by substituting "Stop" for the particular number that position is represented by.

By way of example let us assume that the class in executing the exercise, "Trunk lowered, and Trunk normal," a two-count exercise, in cadence. On count "One" the exercisers are in the trunk lowered position; on count "Two" the exercisers are in the upright position. The instructor counts, "One—Two—One—Two—One—Two," etc., in regular cadence and then substitutes "Stop" for "One." The class should, if exercising correctly, hold the lowered position without a quiver. If there is a slight movement toward the next position, the class is not working perfectly. To resume work the instructor calls, "Class—Start," and the class continues with the exercise as before they were halted. In this particular case, having been halted on count "One," the instructor resumes counting with "Two." If halted at "Three" in a four-count exercise, the counting should be resumed at "Four." This is the instructor's "key" or test to determine how efficiently the individuals

are exercising. It serves to keep the exerciser's "mind on his work," insures better performance, and breaks up the monotony of the regular exercising.

(d) Use of Key

While a class may be stopped in any position it is better to stop them in certain specific positions. After a class has started to perform an exercise it often develops that a large number of the exercisers will be taking a certain position, maybe two positions, poorly; by stopping the class in these positions we can effectively correct these faults. If we want to stop the class anyway, it seems only logical to stop them at these points.

On the other hand, if there is no taking of faulty positions it is best to stop and hold the class in the good postural positions. In our discussion of the command method of exercising it was pointed out that there are no particular advantages to be gained through the holding of non-postural positions; the holding of strained postural positions, on the other hand, is decidedly beneficial. The point made there is equally applicable here. If, therefore, it is optional with the instructor as to what positions the class should be held in, those which make for posture should be chosen. How long the positions should be held varies with the occasion; it may be anywhere from two to twelve seconds. As a general rule the non-postural positions should be held just long enough to make the necessary corrections and the postural positions slightly longer.

(e) Discussion of Utility

It is argued by a certain group of thinkers in the field of physical training, especially the exponents of the French system, that because the rhythmical method of exercising more nearly approaches the natural method of muscular work it alone should be used. This group points out that our daily muscular efforts are moving rather than static. The day's work of shoveling coal, cutting ice, sawing wood, reaping grain, and what not, are all activities of a movement nature. The same is true of our athletic sports, baseball, football, tennis, golf, swimming, and running, all are movement activities. At no time do we hold static positions. It is argued that since this is the natural method for performing muscular work it should indicate to us what is the best method for calisthenic exercising.

Thence we should conduct all of our calisthenic classes by the rhythmic method.

If the sole purpose of the calisthenic drill was to "exercise"—keep the body supple, active, agile and tonically healthy—this process might serve good and well. But in view of the fact that by the calisthenic drill we also want to produce and maintain good posture, and develop precision and accuracy in motor control, this alone does not meet our demands. Static exercising is far more effective in these two fields than is movement exercising.

In the first place physiologists tell us that muscles develop in the position in which they are exercised. Let us take the shoulder girdle, for example. If we exercise the shoulder retractor muscles in their extended or lengthened positions we will develop, and incidentally fixate, the shoulders in a forward position—a condition of round shoulders will exist; on the other hand, if we exercise them in their retracted position—squared shoulders will result. By the rhythm (or movement) method of exercising there is no definite exercising (setting) of the muscles in the desirable positions; the parts "bound" in and out of these positions. This recoil effect is particularly prominent in the strained postural positions which are so eminently associated with the development of good carriage. The exerciser, in going through an exercise, makes a fairly vigorous effort to start the first movement and then lets the movement carry through on its momentum; in due course the parts involved arrive at the end position and then, as they "bound" out of the same, he applies a new muscular effort which starts the parts involved on their new movement. The parts are not exercised and developed in the good postural positions; in fact, the principal effect of such exercising in so far as postural positions are concerned is quite the opposite.

In further confirmation of the fact that vigorous and hard exercising that is more or less static produces firmer and more powerful muscles than does movement exercising we have a splendid illustration in the animal kingdom. The dray horse has short powerful muscles developed by steady, slow, vigorous effort; the race horse has long, slender, wiry muscles, developed by rapid rhythmic running. The weight lifter and the track athlete are other illustrations. By the practice of slow vigorous movements the weight lifter develops a powerful musculature; by constant running

the track athlete develops a lithe musculature. It seems only rational that the same sort of effort which trains and develops the muscles for pulling heavy loads and holding weights would be equally effective in training the muscles involved in holding good posture.

The chief significance of the cadence method of exercising lies in the fact that by this method we secure, in a relatively large way, the principal advantages of both the command and rhythm methods. It was pointed out that the chief advantage of the command method was its effectiveness in making for posture, agility, and muscular strength, and the chief advantages of the rhythm method were to be found in its high degree of hygienic effect and its generally pleasurable nature. The cadence method, by virtue of its rhythmical, continuous, and at the same time definite nature, is highly effective in producing all these results.

VI. IN MULTI-CADENCE

The multi-cadence method is used considerably in the German system of gymnastics. It is particularly adapted to exhibition work, a factor of extreme importance from the German point of view. This method is, as is evident from its name, a variation of the straight cadence method; instead of holding the positions for one count, the positions are held for two or four counts. Exercising by the regular cadence method the positions are held momentarily on the count. In the two-count cadence the positions are held for two counts; in the four-count cadence the positions are held for four counts.

(a) Method of Use

To use this method the class must be acquainted with the exercise and the tempo in which it is to be performed. By giving a demonstration and counting at the same time both of these may be conveyed. The instructor, if each position is to be held for two counts, gives the demonstration, counting as he does so, and then says, "In two-count cadence—Start," and proceeds to count with a regular beat. On the command of execution the class begins to exercise. If the exercise consists of two positions, they reach the first position on the count "One," hold it until they hear the count of "Two," and then return to the starting position, which is reached

and held in the same manner on counts "Three" and "Four." If, on the other hand, the exercise calls for four movements, the class, instead of returning to their starting position on the third count, continues to the next position, which it holds through the third and fourth counts. Following this they proceed to assume and hold the third and starting positions, respectively, on counts "Five, Six" and "Seven, Eight."

For a four-count cadence the instructor calls, "In four-count cadence—Start." In a two-movement exercise the class reaches the first position on count "One," holds it until the count of "Four," immediately after which they move back to the starting position, reaching it on count "Five" and holding it through count "Eight." In a four-position exercise it is necessary to continue the count to sixteen, or better, repeat the count from one to four.

Counting for this method of exercising is very important. The counting should be steady throughout, giving the same time elapses between all counts regardless of what the class is doing. It is good practice, however, to emphasize the count which is the signal for the exercisers to move to the next position. In the two different methods this would be on counts two, four, six, and eight, and counts, four, eight, twelve, and sixteen. In these last cases it is better to count from one to four for each movement than to count to sixteen; numbers above ten are too cumbersome.

Multi-cadence exercising is continuous; the exercisers carry-on until definitely halted. While in theory the instructor should be able to stop the class with the lone signal "Stop" in actual practice it does not work out very satisfactorily. The best procedure is to substitute the signals, "Class—Stop," for the last two counts.

In view of the fact that there can be no doubt about this work being definite there is no object in testing it; in other words, there is no object in using the "key." On the other hand, to make corrections or give a little additional postural training the class may be halted in any of the positions. With this method of exercising this is most effectively accomplished by using the signal, "Class—Stop."

(b) Discussion of Utility

From the standpoint of general effects, multi-cadence exercising should be classified midway between command work and cadence

work. The positions are held two times or four times as long as in the cadence method, depending on the number of counts used; but unlike the command and number methods each position is held for a definite period of time. Because of the fact that the positions are held longer, this type of work has slightly greater postural value than straight cadence exercising, but also because of this fact the proportion of time devoted to movement is decreased and the hygenic effects are somewhat reduced.

VII. IN COMBINATION

A combination method in which the multi-cadence and multi-rhythm methods are joined, while having practically disappeared from current usage, was formerly rather popular. This method is undoubtedly an heritage of the German system of gymnastics where it is used considerably with exhibition drills. As with the independent multi-cadence and multi-rhythm methods this method is used in two different manners, in two-count time or in four-count time. If the two-count timing is used, each movement is made in a two-count rhythm and each position is held over two counts. If the four-count timing is used, each is carried on over four counts.

(a) Method of Use

To use this method an instructor must both present the exercise and indicate the tempo in which it is to be performed. Then to start the class exercising, he says, "Ready—Start." If the two-count timing is used the instructor immediately begins to count, "One—Two—One—Two," and so on in regular cadence. The exercisers begin the first movement on the command, "Start," and, timing their speed, reach the first position on count "Two." This position is held while the instructor counts the next, "One—Two." On the count of "Two" the exercisers start the next movement and, timing their speed as before, reach the next position on the count of "Two." This position is held during the succeeding counts of "One" and "Two." And so on the exercisers continue until halted. If a four-count timing is used the movements and the holding of positions are adjusted to this tempo. The instructor counts, "One—Two—Three—Four," instead of, "One—Two." An exercise carried on by this method is most effectively discontinued by substituting, "Class—Stop," for the last two counts, generally this would be used at the normal completion of the exercise.

(b) Discussion of Utility

The relatively slow nature of the movements combined with their relative infrequency make the hygienic effects of exercising by this method small. Postural positions are held for comparatively long periods of time, but so are the non-postular periods, so there is a tendency to counteract any good influence which they exert. This mode of exercising, likewise, is practically valueless as a means of developing strength, endurance, agility or any of the other qualities which should be derived from a course of exercise. Large groups, working by this method, present very pretty pictures, and for this reason it is used considerably for exhibition purposes, but as a means of real physical training there is considerable question as to its value. Thus its use is not to be encouraged.

VIII. EURHYTHMIC

The eurhythmic method of conducting a drill is wholly indefinite. Unlike the command, number, and cadence methods of conducting a drill, where the exercisers move rapidly and vigorously and hold positions hard and fast, by this method all movements are made slowly and the positions are not taken at all. Accuracy is not demanded; approximation is accepted as being quite satisfactory. The exercisers make all movements with the least possible expenditure of energy. Unlike the rhythmic method, also, where the exercisers, so to speak, "bound" out of the end positions, by this method they simply "flow" through them. In actual fact in this type of work there are no positions, each exercise is a continuous succession of joined movements. An exerciser working by this method gives the appearance of waving and weaving up and down or back and forth rather than actually exercising.

(a) Method of Use

To conduct a class by this method the instructor first demonstrates the exercise, setting the rate of movement at the same time, and then says, "Ready—Start." On the signal for execution the exercisers start to perform. In some cases the exercisers work to the counting of the instructor; in other cases they work independently, each performer working as he chooses. If the exercisers are to work to the count of the instructor, he counts, "One—Two," for two position exercises, or "One—Two—Three—Four," for four

position exercises, in slow even rhythm; if the exercisers are to work independently he sets a mean rate and the exercisers approximate this as best they can. When counting is used the exercisers adjust their movements so as to pass through what might be called the end positions on the counts.

The eurhythmic method is, of course, continuous in type and a class once started carries on until definitely halted. When counting is used the best way to halt exercisers is to substitute the command "Class—Stop," for the last two counts. On the other hand if the class is working in free time, the instructor may command, "Stop," at any time and on this command all assume the fundamental position.

(b) Discussion of Utility

The eurhythmic method of exercising is very frequently called esthetics. The systems of Dalcrose, Demeny, and Delsarte are all varieties of this type of work. It is useful in creating grace, suppleness, flexibility and relaxation, but has comparatively little hygienic effect, no definite corrective effect, and does not make for muscular strength or endurance.

Eurhythmics was advanced first in Europe about a decade ago and shortly after it was introduced in this country. At present it is being promoted quite extensively in the larger centers of population, such as Paris, London, Berlin, Chicago and New York.

Excepting in France, where a form of this work has been introduced into the national system of physical education, it is used almost exclusively in private institutions commercially interested in its promotion. In practically all cases, the classes are made up of small children, especially girls, up to ten years of age. Excessive claims made about the work have not been borne out in actual experience. As conditions exist to-day we are not justified in even considering this method of work for introduction in our program of physical education.

IX. AT WILL

The at will method constitutes a particular type of teaching procedure as well as a distinct method of exercising. The main distinguishing features of this method of conduct are as follows:

(1) The instructor walks through the class; (2) each member of the class works independently of the other members; and (3) the exercises are executed forcefully.

(a) Method of Use

To use this method the instructor sets the exercise, using either a description or a demonstration, and then commands, "At will—Start." The members of the class begin to perform the exercise, immediately, each working to his own time totally regardless of the performances of the other members of the group. During the performance of the exercise, the instructor walks about through the group making individual suggestions and corrections as are needed. When the instructor decides that the exercise has been carried on sufficiently he calls, "Stop," upon which the exercisers discontinue its performance. Without further instruction they assume the attitude of "At Tension." (Since the members are performing in all stages of the exercise they cannot be halted in any orderly manner. The instructor merely stops them when he chooses.) The instructor then proceeds to introduce the next exercise.

The method of exercising is essentially a combination of the slow rhythm and cadence methods. Each student attempts to execute the exercises in his own natural cadence, making the movements with relative slowness and taking the end positions with power and forcefulness. The main point for consideration, perhaps, is that of the end positions, which should be assumed in a vigorous manner, calling for every ounce of effort that the exerciser can put into it. The effort desired, perhaps, may be best described as "straining."

With this method of conduct most of the actual teaching is done while the class is performing the exercises. To do this the instructor moves slowly through the class, stopping here and there as he senses the need, and quietly helps the various members. Manual manipulations, personal suggestions to the individual, personal demonstration for the individual, and personal stimulation of the individual are his principal means of assistance. Throughout this work the instructor should aim to set up an atmosphere of personal responsibility; in other words, he attempts to give the impression that it is assumed that each individual will do his best. It can be explained that they are going to put in so much time anyway, that

the more they put into it the more they will get out of it, so they might as well make the most of the opportunity.

In our experiments with the use of this method it has been found that some students are considerably aided in their efforts to achieve good results if they count (set the timing) to themselves as they work. Care should be taken, though, that this counting does not become audible; when this occurs it interferes with the work of other members of the class. It is also helpful to train performers to be self-dependent. Each should ignore the work of the other members as far as possible and concentrate on his own performance.

In working with beginners or introducing new exercises the instructor should use the command method—teaching the exercises by parts; or if conditions are favorable, stand before the class and give a complete demonstration of it—teaching it thus in its entirety. In either case the approximate timing and the main points of emphasis should be carefully, though briefly, explained. In this method of work special attention should be paid to having the class members learn the exercises. When the exercises have been learned they can be quite effectively introduced by the naming method.

(b) Used with Particular Exercises and Special Groups

It will be seen that this method of procedure is especially suited to the conduct of exercises involving special movements, or special methods of execution. Exercises which are slightly complicated, exercises which involve holding certain positions and not holding others, exercises which require slow but steady movement, and exercises calling for emphasized stretchings may be carried on with particular effectiveness in this way.

The at will method of class conduct is particularly informal. For this reason it is best adapted for use with groups wherein good class morale and a sense of individual responsibility exists. Individuals who are in need of corrective work, being easily sensitized to the necessity for conscientious performance, thus are readily led by this method of conduct. Adults, taking part in this work, voluntarily as they do, are also effectively led by this method. College students, too, owing to their state of maturity, are amenable to this method of leadership.

With intermediate grade school children and Junior and Senior High School boys, however, conditions are a little different. These

groups are, of course, immature and consequently somewhat irresponsible. In attempting this method of work here, the problem of management looms large. In many instances, as conditions are at present—overly large classes, poorly equipped teachers, low class morale, etc.—it is perhaps best not to attempt it. On the other hand, where the leadership is sufficiently competent it certainly should be given a trial.

Below the fourth grade conditions are altered still again. With these groups the at will method is perhaps the most satisfactory of all methods. Due to the highly imitative instinct of children of this age a type of calisthenics called "story play" is used. Organized work in unison is practically impossible. Under these conditions the at will method or, as it is sometimes called, the individual method, is very effective.

Special attention should be called to the fact that in attempting to use this method the instructor, trained and experienced in the "ensemble" methods of work, will have real difficulty at first in convincing himself that it is practical, useful and satisfactory. The novelty of it has a demoralizing effect on the students. The instructor's technique is relatively weak. The students are unfamiliar with the method. Everything conspires to break down one's faith in it; the instructor fails to grasp the fact that, as far as he is concerned, the whole project is in its novitiatory or empirical state. Patience, continual practice, and everlasting study, however, will eventually prove to the instructor that after all, in spite of many disheartening experiences, it is a most satisfactory way to teach calisthenics.

(c) Advantages of At Will Method

The method has been used with corrective classes in a number of institutions, but in so far as the writer's experience extends the only place that it has been seriously attempted with regular gymnasium classes is at the University of Illinois. If our experience can be accepted as a criterion of its utility and significance there is every reason to believe that eventually it will be the chief method used. The chief advantages of this method are as follows:

1. In the first place, when well handled, the class members really learn the exercises and in consequence tends to execute them more effectively. When working in unison under the immediate

direction of the instructor the student leans heavily on him and thus for the most part merely "goes through the exercises." The instructor demands too much of his attention to put much on himself. When doing the exercises at will, on the other hand, the instructor more or less obscures himself and the student has an opportunity to concentrate his attention on his own performance. Normally this should make for better work.

2. Secondly, this method of conduct conforms more to the natural tastes of the exercisers than any of the others. Questioning about fifteen hundred students at the University who had executed the Illini Eleven both by this method and by the rhythm method we found that the majority preferred the former method. The explanation for this is not difficult to locate. Exercising by the other methods the class members are constantly under the domination of the instructor. This smacks of military leadership and becomes exceedingly irritating to many students. The instructor is more policeman than teacher. When working at will the instructor sets the exercise (describes, demonstrates, or names it) and then the students are, as far as possible, put on their own responsibility and initiative. On the whole they accept this responsibility readily. Properly led, a bond of intimacy develops between the exercisers and the instructor. The performers, conscious of the necessity for vigorous, exact work, extend themselves to the limit of their abilities.

3. Thirdly, this method of performance conforms very closely to the natural and normal method of adult practice. During adulthood the majority of individuals who use these activities do them alone and without supervision. By using the at will method in class work we train the students to do the exercises in precisely the manner in which they will be commonly used in later life. The carry-over effect of this method is judged to be much greater than by any of the other methods.

4. Fourthly, with this method of conduct the extra-exercising activities, such as opening ranks, time setting, disciplining students, and so on, are reduced to the minimum, and both class and instructor can concentrate on good performance. This certainly makes for efficient class management.

5. And lastly, once mastered, it consumes less of the instructor's energy than any of the other methods. In the other methods

the instructor has to be constantly alert if good results are to be obtained. With this method the instructor goes quietly about his business, correcting, stimulating, and helping the exercisers, thus conserving his energy. Properly handled, this method produces maximum student effort with minimum instructor effort. This is an important factor when instructors are teaching four, five and six classes a day.

(d) Disadvantages of At Will Method

While on the surface it may appear that there are some objections to this method of work, these, it is found upon analysis and experience, are based on erroneous premises, or found to be of vanishing significance. The most common of these objections are discussed in the following passages.

1. The experienced instructor, accustomed to unified class action, gets a very bad first impression of the at will method. He is confounded by the confusion, chaos and disorder that seems to exist. He has the desire, almost uncheckable, to take charge and straighten out the mêlée. This attitude, of course is totally unwarranted. If this method is educationally more sound and proves to produce increased results, then the element of apparent confusedness must be overlooked, in fact, graciously accepted.

2. This method of work is also criticized on the grounds that it is not pleasing to watch, not spectacular. The answer to this challenge is obvious. The work is not designed for this purpose. The gymnasium is a field of education and not a circus tent. There is no serious objection to having spectacular shows, but when spectacular effects and educational effects conflict then the former must give way to the latter.

3. One other erroneous criticism offered is that this method gives the lazy, indifferent student a splendid chance to lie down on the job. While at first glance this may seem true, in actual practice, under careful leadership, it works out quite differently. By this method of conduct the instructor has much more freedom in his movements and can thus concentrate his attention on these very individuals. Tactfully handled, they can be lead into doing just as good work as the other members of the class. It is wholly a matter of cleverness in leadership. Lazy exercising is no excuse for lazy leadership.

4. The only really serious criticism of this method is to be

found in the fact that the exerciser misses the satisfying effect of working in unison with others. A number of the students at the University have mentioned this condition to the writer. The exercisers derive an undefinable pleasure out of swinging through the exercises ensemble—moving arms together, pounding feet on the floor together, bending trunks together, etc. Unquestionably it has a real stimulating effect on many individuals. However, as in many other instances when two desirable procedures are in conflict we must weigh them on the balances and discard that which seems of less importance or compromise in our practices. Further experiment is necessary, though, before we can say definitely what should be done.

X. PRINCIPLES FOR USAGE

Nine distinct methods for exercising have been outlined. The reader is perhaps a little confused and wondering if all of them should be put to use, and if all are not to be used which should be used and under what specific conditions should they be used? This matter is discussed somewhat in detail in the chapter entitled, "Lesson Plans for Normal Groups," but for the purpose of setting up the general principles for usage and incidentally "clearing the air" the main facts will be outlined here.

The command method, number method, and rhythm method represent a triad that are all important. These three methods are used with practically all groups. In general the command method is used to introduce exercises, the number method to carry on exercises that are chiefly valuable for their postural effects, and the rhythm method to carry on exercises chiefly significant for their hygienic effects. With well-trained groups the cadence method can be substituted for the rhythm method in some exercises. The at will method can be advantageously used with any group where conditions are favorable. These conditions imply small classes, good class morale and good leadership. Where these conditions exist the at will method should most certainly be attempted. The multi-rhythm, multi-cadence, eurhythmic and combination methods present no advantages favoring their use under present conditions.

So, in final summary, the average teacher of calisthenics needs to learn only four methods, namely, command, number, rhythm and at will. It would be decidedly to his or her advantage, however, to learn these thoroughly.

CHAPTER VI

PRINCIPLES OF LESSON FORMATION

Some time ago the author asked an untrained man, serving in the joint capacity of physical instructor and coach at a small school, what principles he followed in shaping up his calisthenic drills. He answered, "Principles? I don't know any. I just give them a flock of exercises." Unfortunately this is too often true; the calisthenic drill is a "flock of exercises," a sort of necessary evil, necessary and evil to instructor and class alike.

Whatever we teach must have some purpose, some ultimate object or end; and to achieve this end there must be a best course. There must be some guiding, underlying principles. In shaping up a course in American History, for instance, the instructor reviews the field of American History, in some manner, from the earliest beginnings to the present date—he gives the course totality. Out of a mass of material he chooses that which seems to be most pertinent—he selects his material. He presents his material in orderly manner, and he properly relates its various items—he gives the course unity. In his teaching he gradually advances from the beginning to the end—he progresses. He does not under any condition give his classes a "flock of dates or facts." His instruction is based on well-established pedagogical principles.

The calisthenic lesson should be organized and presented in the same manner. The principles of selection and totality, referring to the nature and variety of the exercises, and unity and progression, referring to the organization of the same, should govern the formation of every drill.

I. SELECTION

A certain school of German gymnastics at one time held that the purpose of gymnastics was to bend every joint in the body to the limit in every direction, to make every movement that it is possible to make, in other words, to exercise and develop every muscle in the body. In this connection one man, Emil du Bois-Reymond, went so far as to outline four hundred thousand exer-

cises. The great mass of people, and, incidentally, a great number of physical instructors, are still thinking and working in the shadow of this philosophy of gymnastics. The principle of selecting exercises on the basis of their significance from the standpoint of the individual's all-round physical needs—need for health, need for posture, need for suppleness, and so on, definitely recognized physical needs common to all mankind—is not widely appreciated in this country.

The Swedes, thanks to Ling's splendid analysis of gymnastics, have long recognized the necessity for sorting and choosing exercises. Baron Nils Posse, in his book on "Educational Gymnastics," points out the need for choosing our exercise as follows: "To do all that which is possible must be out of the question, first because it would take a lifetime to get through with all the movements that can be constructed, and, second, because all that which is possible is not necessarily useful or desirable. A selection of some sort must be made, one following some definite and scientific plan or rule. The exercises are to be applied for the sake of the one exercising, for his own welfare; consequently the standard which decides the value of each exercise is the effect of the movement upon the one exercising. Thus, in order to be scientific, a system of gymnastics must be based upon the laws of the organism itself, and not upon any arbitrary considerations.

"Any exercise entering into a system of gymnastics should have a good reason for existing. Bearing in mind that the object of the training, putting everything in one work, is health, we should first find out what the body needs to that end, and construct the exercises so that those needs will be filled. Each part should be developed in its proper relation to the rest of the body, and anything leading to unbalanced power should be avoided. Athletic skill in some particular direction, and great muscular strength, may be very attractive, but usually they are acquired at the expense of other parts of the body. Then, exercises are chosen for their physiological effects rather than for the muscular development to which they lead. The movements are to encourage nature in her normal activity, and also to prevent and overcome tendencies to abnormal development; in fact, to counteract the evil effects of our modern civilization, and inherited racial defects."

(a) Big-Muscle Exercises

The human organism, with its numerous joints and complex muscle structure, admits of an infinite number of movements and poses. The question is, which of these movements and poses should we use in one calisthenic drill? This, of course, is determined largely by our aim, but in view of the fact that our aim, as previously stated, is the development and maintenance of the body in a fair state of organic health and physical efficiency (giving these terms a very generous meaning) we are limited to exercises which definitely contribute to these ends.

We are thus confined to so-called "big-muscle" activities. All activities requiring intricate, delicate manual or pedal dexterity, such as painting, writing, sculpturing, the playing of musical instruments, etc., commonly known as cultural arts, or exercises designed to develop skill in the same, are thus excluded.

But some limitations must be put on big-muscle activities. While contortions, acrobatics, stunts, feats of strength, and so on, may develop and maintain health and physical efficiency, the practice of such activities, like athletics and labor, tends to develop the body in special ways. Besides, in this particular case, we are not striving to make acrobats, contortionists, weight lifters, jugglers, athletes or specialists of any sort; we are striving to make healthy, strong men and women. We should, therefore, confine our selection to those exercises which will most effectively train and maintain the body in a reasonable state of health, uprightness, suppleness and agility, as rational thinking shows there are needs.

(b) Simple Exercises

The great fundamental principle underlying the selection of all exercises is simplicity. The free-exercise drill, as has been repeatedly pointed out, has for its principal objectives, setting up the individual, training his motor mechanism along lines of natural usefulness, giving him a good physical workout, maintaining some degree of muscular strength, and maintaining physical youthfulness. Under no circumstances does physical training have for its object, as one would readily deduce from the type of work introduced by some instructors, the making of ambidexterous monkeys out of men. To achieve the established objectives of the free-exercise drill the most simple and elementary exercises suffice.

The use of simple exercises, as contrasted with complicated and freak exercises, is desirable from many standpoints. In the first case, it facilitates instruction; instead of spending a great part of his time merely teaching an exercise, the instructor can devote practically all of it to coaching the exercisers in those exercises which they can readily perform. It also facilitates the work of the exercisers; instead of worrying about a lot of fancy movements, the exerciser can center his attention on correct performance. Fundamental exercises that do not interfere with normal physiologic and anatomic functions, only, should be used.

Discussing this matter of simplicity Crampton has the following to say: "In a complex exercise given for the first time, the mind of the pupil is necessarily concentrated for the most part upon accuracy involving the proper adjustment of a large number of muscles and joints. He cannot concentrate upon any one item. such as the position of the shoulder, without for the moment neglecting the position of the knee, head, hip, and trunk. Moreover, he cannot concentrate upon alert performance, for he has to make a collection of his various movement impulses and put them together. Simplicity, therefore, favors an accuracy and alertness which complexity makes difficult. Accordingly, we should use simple exercises as a rule and avoid complex exercises.

"It is exceedingly difficult to teach the ordinary normal school graduate to follow this rule, and some teachers never learn it. They wish to teach the latest complexity which they were given as seniors. As a result, they merely demonstrate the excellence of their personal performance and the inferiority of their pedagogical training. The best teachers have learned that by the use of simple exercises they can get practically all the results they wish, for it is habits of alertness and accuracy which have the most educational value."

(c) Criterion for Shaping-up Exercises

The question then arises, what particular kinds of exercises should be used; also, what is our criterion for shaping-up exercises? The answer is, any exercise that produces desirable and worth-while effects which the exercisers can readily execute is satisfactory. This is not an arbitrary ruling but a principle based on sound reasoning and practical teaching experience. It is obviously

wrong to spend time on exercises that are not worth while. Further, it is wrong to spend time on exercises that are difficult to learn and perform when equally as good or better results can be secured from exercises that are easy to learn and perform. The instructor should apply this test to each exercise he considers for use: Is it worth while, and is it learned and performed readily? Exercises which pass this test should be used; exercises which fail to pass should be discarded.

An intimate study of calisthenics and calisthenic instruction reveals the fact that there are several kinds of exercises used which should not be used and similarly a number of kinds of exercises which are most effective. These are outlined briefly under the two following paragraph headings:

(d) Six Kinds of Exercises to be Avoided

1. Freak exercises, such as abducting and adducting the fingers, spreading and closing the feet while the heels remain in place, wabbling the head from side to side, etc. The writer met a major in the army who insisted that shifting the scalp was a very valuable exercise.

2. Odd-count exercises; that is, three-, five- and seven-count exercises. On occasion a three-count exercise that is highly coördinated might be used, but in no case should a five or seven count exercise be used. The average group simply cannot execute them well. The physical organism seems to respond readily to even rhythms and rebel at those which are uneven.

3. Many movement exercises. Six-count, eight-count, ten-count and twelve-count exercises involving a large number of separate, distinct movements are samples. A student doing practice teaching at the University of Illinois spent ten minutes a day, twice a week, for an entire semester attempting to teach a class of students a thirty-two count exercise. At the end not one member of the entire class could go through it without a hitch. More than that, the instructor himself could only rarely execute the whole series without falling down at some point. On occasion a six-count exercise, and even an eight-count exercise that is especially rhythmic, coördinated, and continuous might be used, but this is only possible with well-trained classes. It should be pointed out that eight-count bilateral exercises involving four counts to the left

and four counts to the right are not included in this rejected group. With a few exceptions, exercises of this type are suitable.

4. Complicated exercises. Frequently the arms and the trunk, the legs and the trunk, the arms and the legs, and the arms, legs and trunk, are used in combination in the same exercise. When this is done care should be exercised to coördinate the various parts into a harmonious whole. Uncoördinated exercises are exceedingly difficult to execute and offer no special advantages.

5. Dissemetrical exercises, such as raising one hand forward and the other sideward, raising a foot sideward to one rhythm and raising the hands sideward to another. Exercises of this sort have been very common in the past, but to date there has been no logical argument presented for their use. The argument that "they make for increased coördination" cannot be accepted on the grounds that only useful coördinations have any value. There is no reason why any coördination should be learned for its own sake. These dissemetrical coördinations are decidedly non-utilitarian.

6. Exhibition exercises. Demonstrations are very common and popular and for the sake of stimulating interest on the part of the general public and increased effort on the part of the performers they are very useful and desirable. This holds true so long as the work presented consists of a demonstration of the work actually carried on and presumed to be in every way the most desirable and valuable. Too often, however, in preparing for these demonstrations, the instructor selects exercises according to their fancy appearance rather than according to their utilitarian significance. Good exercises which have no show quality are discarded. When this occurs the demonstration becomes an exhibition and the time and effort expended represents a distinct loss. The work ceases to be calisthenics and becomes pageantry.

A demonstration provides an excellent incentive for good work. The instructor should capitalize this opportunity to secure perfected execution of good exercises and not waste it on poor ones. The fundamental objects of calisthenics as stated elsewhere are organic health, good posture, motor control, etc., and in no case "pretty exercises." The instructor who seriously considers exercises for their exhibition effect has made a grave mistake.

(e) Kinds of Exercises to be Used

The only wholly satisfactory exercises are single or double exercises (exercises which involve two parts of the body, such as the arms and legs) which are fundamental in nature, coördinated, and of two- or four-count duration. In two-count exercises the exerciser moves from the starting position to another given position and then returns to the starting position. As a general rule in four-count exercises the last two counts should be the reverse of the first two counts. As simple as it may seem to the inexperienced, four-count exercises which contain four separate positions and movements are very difficult to execute with continued success. The two following exercises illustrate the point:

Unsatisfactory Exercise	*Satisfactory Exercise*
1. Hands on neck	1. Hands on neck
2. Hands upward	2. Hands upward
3. Hands at shoulders	3. Hands on neck
4. Hands normal	4. Hands normal

In doing the first exercise the exerciser has to be constantly alert to place his hands on the neck and shoulders in the proper succession. Fifty per cent of the average class will fail to do it correctly three times in succession. The second exercise, on the other hand, will be executed by the class with a negligible percentage of error.

(f) Additional Factors

The principles outlined above underlie the selection of all exercises for all groups. In selecting exercises for particular groups, however, additional factors must be taken into consideration. The sex of the group, age, state of training, physical ability, mental attitude, amount of time available, restrictions and limitations of the exercising area, and the nature of the organization promoting the work are all factors which must be taken into consideration. Each does not necessarily call for changes and alterations contrary to the principles which have been laid down, but to get the most satisfactory results they should be given due thought. The kind and amount of influence which these factors exert is carefully outlined in another chapter. (See chapter entitled, Programs for Normal Groups.)

II. TOTALITY

In addition to selecting the most useful and practical exercises it is important that each drill be as all-comprehensive as possible. Each lesson should be directed toward improvement and in all of the desirable directions. In so far as it is possible, when we are dealing with normal groups we should seek to exercise the whole body in each drill. It is obviously wrong to exercise the legs to-day, the trunk to-morrow and the arms the following day; the whole man should be included in each daily program. No important organ or function should be overlooked or slighted, but all should receive attention according to their importance and needs. Each lesson should give a sample of all that we can offer in calisthenics; the samples may vary from day to day, but the main types should be always present. This is called the principle of totality.

Under certain conditions, of course, it becomes absolutely impossible to adhere strictly to this demand. The time allotment, for instance, may be totally inadequate. Or, if the exercises are carried on in the classroom, the presence of seats may seriously interfere with the realization of this principle. The nature of the ground or floor of the exercising area may impose certain disrupting contingencies. And in certain cases of mixed classes we have other hampering features that deter the securing of the best results. All these should be looked upon as features handicapping organization and administration, to be eradicated if possible. When they cannot be eradicated we must, of course, do the best we can and depart from accepted principles only so far as we are absolutely obliged to.

(a) Common Errors from the Standpoint of Totality

Unfortunately this totality principle seems to be commonly ignored. To convince oneself that this is true, it is only necessary to step into the nearest gymnasium and observe the work being done; to ignore it seems to be the rule rather than the exception. It is not uncommon to see a class spending the bulk of the period on arm exercises or absurd leg and head exercises. The writer recalls a drill at one of the cantonments where, out of a total of thirty minutes spent in exercising, twenty were spent in a rather listless

waving of the arms. Such a procedure can hardly be expected to set up the soldier, give him a thorough workout, or do anything else worth while.

A perusal of the chapter on "A Critical Study of Representative Drills" will supply the reader with further proof. A few of the common defects discovered in this study were as follows:

There was a decided over-usage of arm exercises. In the first case there was a great disproportion of independent arm exercises —an average of three in every drill. In addition ten of the other exercises used in each drill combined the use of the arms. The average drill included seventeen exercises. Thirteen out of seventeen exercises involved the use of the arms—far too many.

There was a decided under-usage of trunk turning exercises. Our study shows an average of about one in six drills. Twisting the trunk is an excellent exercise from every point of view and each drill, with the possible exception of drills for grade school children, should contain at least one of these and with mature groups two would not be amiss.

There was likewise a very pronounced deficiency of good neck exercises—on an average only one drill in each seven included an exercise of this sort. While our study shows this proportion, further observation has led the investigator to believe that even this is above the general practice—one in ten would be a closer indication of actual conditions.

Chest exercises, too, were conspicuous by their absence. On an average but one drill in fourteen included an exercise of this sort—three drills used one and two included two each.

There seemed to be a slight over-usage of trunk forward bending exercises. They were present in sixty-six of the seventy drills with a total of one hundred and twenty-four being used—an average of about two to each drill. The actual distribution was as follows: Four used none; thirty-one used one; twenty used two; nine used three; four used four, and two used five. Of all the trunk exercises bending forward is the least significant and valuable and should not be used with greater frequency than once in each drill.

And reversely there was a very evident shortage of trunk lowering exercises. They were present in but thirteen of the entire seventy drills studied, an average of about one in five drills.

One study shows other common mistakes due to the slip-shod teaching method which prevail, but these are the outstanding ones. Those who are interested in the whole story are referred to the chapter in which this is discussed.

(b) Lesson Plan Essential

The more one studies this problem the more evident it becomes that the principle of totality or all-roundness is not carried out. This is mainly due to the fact that most instructors use a haphazard set of exercises and do not follow a charted course. In setting up the Day's Order the Swedes have arrived at a happy solution of this problem. In this plan they have classified all the desirable exercises, according to their effects, into fourteen distinct families. Then to insure all-roundness in each drill they merely select and present one exercise of each type in each lesson.

This procedure may be followed with equal facility in the construction of our calisthenic drills. In consideration of this fact this method has been adopted in this work. The desirable types of exercises have been organized into what we have chosen to call "The General Lesson Plan." By following this plan no vital part of the body is neglected and there is no overworking of any other part, totality is constantly insured.

III. UNITY

After selecting the exercises to be used in a given drill the question arises should we just clutter them together in haphazard order or is there reason for arranging them in some specific way? Nothing that we know of argues for the arrangement of these exercises in any definite, specific, cut-and-dried way, but there are certain well-established physical and physiological laws which should be taken into consideration in making out the order. Bolin discusses this aspect of exercising so thoroughly that I shall quote his entire thesis on it. He says:

"Granted now that the principles of selection and totality be accepted, granted, in other words, that we must carefully choose our exercises, and, after classifying them into natural families according to their effects, apply a great variety of them in each lesson, we may well ask the question whether the representatives of the different families may be utilized in the day's lesson at hap-

hazard, or whether it may not be possible to gain better results by following some definite sequence."

(a) Gradual Warming-up

"This question forces itself upon us by observation in other fields. Darwin pointed out that every animal before a supreme effort instinctively makes numerous movements, which seem to serve the purpose of putting it in a favorable condition totally apart from the more mechanical advantage of suitable posture. The bull prepares for the attack by pawing the ground, and by brandishing his horns and by bellowing. The cat lashes his side with his tail before springing on his prey. Even man stretches when rising in the morning, and if he becomes embroiled in a quarrel which may end in a fight, he shows a tendency to make movements with his arms and legs which apparently serve no purpose. There seems to be some need to be filled by gesticulation of some kind. And we have more or less unconsciously, perhaps, made application to this in various ways. The race horse is put through a preliminnary canter before he is called upon to exert himself in the race. The baseball players always take their preliminary practice before the game begins. They are warming up.

"It is a usual experience that a man who wishes to test his strength by the dynamometer shows greater power on a second trial than on the first one. Physiologists have established by laboratory experiments that the first muscular contraction in a series is not quite so strong or complete as those immediately succeeding, but that there is a preliminary rise in the curve before it descends as a result of fatigue. It is now quite common in the gymnasium to begin with some warming-up exercises before work of greater intensity is begun. The general usefulness of some form of introductory exercises is well established and we may well assert without fear of serious contradiction that the day's lesson must begin with mild exercises. It is not necessary to cite the probable physiological reasons for this, but simply to refer to experience."

(b) Gradual Letting Down

"On the other hand, it is practically and equally well established that if violent and prolonged efforts are made to the very

limit of the individual's powers, a sudden cessation of the activity is less favorable than a gradual decrease. From the pathological field experiences in this regard may be quoted. Suppose, for instance, that a person with an organic heart trouble makes strong and conservative efforts. Records are not rare of men with cardiac affections falling dead while in the very act of lifting a heavy weight. But it is surely not so common that a man has met his fate while running. It is when he has reached his goal, when he has taken his seat, when the activity has ceased, that the weakened heart fails to respond to the calls upon it.

"I know of no authoritative physiological explanation of this, so I have endeavored to theorize for my own satisfaction and my ideas run about as follows: The circulation is carried on mainly by three agencies, the heart, the respiration, and the muscular encroachments upon veins and lymphatics. During the run all of the three agencies are at work to their utmost capacity. With the sudden cessation of activity the last one is withdrawn and a greater amount of work therefore falls upon the others, because the circulation is not immediately restored to its normal rate. The heart was assumed to be worked to its utmost. It now gets more to do, and it fails. If, instead, the muscles are kept working with a descending intensity they continue their pumping effects, and the heart gradually adjusts itself until the danger-point is passed.

"But we do not deal with pathological conditions. We have normal individuals to deal with and should draw our experiences from such. If we again turn to the race track, we find that experience has taught the jockey not to stop as he has passed the finishing line, but to walk his racer about at least for a few minutes "to cool off." Many a careful trainer does not allow the athlete who comes in exhausted from a long run to follow his inclinations and flop down on the field as he crosses the line, but, with a sweater thrown over him, he is made to walk up and down even against his will, dragged along, maybe, by some friend, until he has recovered to some extent. Now, in the gymnasium, we do not, and should not, drive our students to the point of collapse. But it is our business to have them make strong efforts and both respiratory and cardiac actions may thereby, to a certain extent, be embarrassed, while the heat of the body is increased. If, after these efforts, intellectual labor shall be resumed in sitting posture, may it not be well to

take precaution of letting the system gradually quiet down and cool off, whereby is also gained the advantage of bringing the pupils into fit condition to resume their studies immediately with the best results? Because nobody just in from severe physical activity can do his best mental work, some minutes must elapse before the system has readjusted itself to the changed conditions."

(c) Unified Energy Curve

"Our conclusions are therefore that just as we should not begin our work with exercises requiring the strongest efforts, neither should we let these come at the very end of the lesson, but they should be followed by some forms of milder intensity suitable to allow the heart and lungs to approach their normal degree of activity and to allow the surface temperature to decrease.

"This procedure seems in principle to be accepted by a very large number of physical directors. And still they plan their lessons in such a way that the energy curve shows a steady rise to the very end. They explain it by pointing out that the march from the gymnasium to the classroom, or the walk to the dressing rooms and the motions involved and the time spent, in the changing of clothes, and the common use of the bath after the gymnastics makes special quieting exercises unnecessary. My answer to this is, that if the necessity for some agency of a quieting nature be conceded, then it is the duty of the teacher to see to it that the necessary exercises are taken before the class gets out of his control. He should not rely upon what the pupils are doing afterward. And I have heard no reason advanced against employing a few mild exercises at the end of the lesson. The only reason given by anybody seems to be that it is not absolutely necessary. Those who do not see the necessity for it have a right to omit them. But those who believe that it favors the well-being of the pupils must not throw the responsibility upon the pupils themselves.

"We thus observe that our common experience tells us that, to gain the best results, it is not sufficient that the exercises be well selected and all-sided, but that some attention must be paid to the sequence in which they follow each other in the lesson. In other words, the individual exercises must not be considered as perfectly independent, separate, and distinct entities having no connection with each other, no bounds of union but as parts of an organic

whole, a unity, having relations to each other, being dependent on each other, and mutually assisting each other to influence in the most favorable manner another organic whole, another unity, the individual, in which also closely dependent parts exist. It is not enough to see to it that we give only exercises which are beneficial in themselves. It does not suffice that we say to ourselves that we have applied exercises to improve all the main functions and organs. We must also consider whether all these well-chosen exercises form a harmonious lesson in the sense that one does not annihilate or unduly multiply the effects gained by the other by being placed in a false time relation to it."

(d) Summary of Totality Discussion

In this discussion Bolin is talking about gymnastics which includes exercise both with and without apparatus; the principles enumerated, nevertheless, apply equally well to free-exercising alone. The exercises selected thus should be arranged along the following general lines: The first exercises should be of a disciplinary and warming-up nature—for this purpose in Calisthenics we use the comparatively light arm exercises. After this the heavier movements of the legs and body should be introduced in order of their increasing vigor. Exercises requiring decreased vigor may be occasionally introduced as the drill progresses, but all in all there should be a steady development toward the exercises of greater severity. For the purpose of restoring the exercisers to a condition approaching normal, then, an exercise or two with pronounced depleting effects should be introduced to close the drill.

This order of exercise is very important and should be carefully observed in the construction of every drill. By arranging them in this graduated manner we do not put an undue strain on the heart; heart strain may not be so probable with youth, but it is an ever imminent likelihood with the middle-aged and elderly. Besides avoiding heart complications it also avoids straining tendons, tearing muscles, and pulling cartilages. I once saw a group of elderly business men inducted into severe exercise so suddenly that one was prostrated, two others suffered tendon lesions, and the whole group suffered untold stiffness and soreness for days after. A little understanding of the principle of unity would obviate a calamity like that.

IV. PROGRESSION AND CHANGE

Progression is a matter of the weekly, monthly, yearly, life program of physical training. It is clear from the laws of nature that life is progressive from its inception to its termination and the development of mind and body proceed by such gradual stages that it is impossible to discern any particular period when a notable change takes place. It is therefore only reasonable that any scheme for improving health and development should be in accord with the general principles which nature has indicated.

(a) Produces Added Interest and Added Results

Discussing the matter of progression, Skarstrom makes the following statement: "From the standpoint of interest as well as all-round effectiveness, rational progression is essential in gymnastic work. It is particularly important when subjective motor training is one of the phases of the work to be emphasized. Lacking the element of progression, no work can be of much educational value. Nor can pupils be expected to remain interested for any length of time in work in which they find nothing further to learn, or in which their growing strength and ability are not constantly given full scope, are not put to new and increasingly difficult tests. Their instinct for progression must be satisfied, to some extent at least, even when the main object of the work is muscular exercise for the sake of organic stimulation. Otherwise they will not long continue to do it with regularity and persevering effort, but will either lapse into habits of bodily inactivity, or will rely solely upon the occasional indulgence in some game or sport which will give them a certain amount of muscular exercise, even though it be inadequate and not always adapted to their special needs."

In summary, two motives lie behind the principle of progression: (1) The institution of any change in the exercises to gain more complete results; and (2) the introduction of new exercises for the sake of variety and interest. The first has to do with enriching the program, the second merely complies with a principle fundamental to all teaching. No drill, no matter how complete, gives all the benefits we desire; it is impossible to exercise the body in every way that we wish in a single lesson whether given to boys and young men where motor training is to be emphasized or older

men where organic stimulation is to be emphasized. New exercises must be introduced to exercise muscles and groups of muscles in new ways and also exercise muscles which have been unavoidably neglected. Interest is basic to all learning. The same old drill year in and year out tends to become monotonous—the exercisers lose interest—and poor work is a natural consequence. One of the most effective ways for gaining and maintaining interest is that of introducing new exercises, new combinations.

(b) What Constitutes Progression

What constitutes progression is a very popular subject of discussion; the literature on gymnastics is filled with it. One writer, Jacob Bolin, has drawn up twenty-three laws governing this principle. While these analytical studies are interesting from the purely scientific point of view in actual practice, they are rather fanciful and impractical. The average teacher is too busy to arrange drills according to them and the curriculum maker or supervisor of physical education has too many other projects more worth while to waste his time in the detailed consideration of them. Previously it has been pointed out that it is highly desirable to use simple exercises. If we follow this principle we are automatically precluded from using the great majority of "fine and fancy" exercises which it is possible to construct by following these numerous laws of progression. Whether an exercise is progressive or not is largely a matter of observation and common sense. If an exercise is an enlargement of previous exercise, more difficult yet only mildly so, then the exercise may be considered as progressive.

(c) Change Serves the Purpose

In actual fact, though, an exercise does not need to be progressive (an enlargement on a previous exercise) in the strict sense of the word to satisfy the conditions outlined above. In many cases a change will do just as well and may even be desirable. In the case of neck and chest exercises, for instance, the principle of progression may be adequately and satisfactorily carried out in the following manner: First exercise (used from fifteen to thirty meetings). "Head backward—head normal." Second exercise (used from fifteen to thirty meetings). "Chest upward—chest normal." Third exercise (used from fifteen to thirty meetings). "Chest upward and head bent forward—chest normal and head normal."

In the same way instead of arranging a progressive series of knee-bending exercises we may use, in succession, knee bendings, chargings and lungings. In both cases the changes serve our purpose equally as well, if not better, than straight progression. This procedure calls altogether new muscle groups into play and, thus, in a most concrete way, expands the horizon of our program.

(d) Common Violations of this Principle

The principle of progression is violated in opposite extremes. Some physical instructors seem obsessed with the idea that every drill should bear some element not contained in the one preceding; others, either as a matter of principle or from an attitude of indifference, pursue the course of using the same drill continuously. Both are wrong; both seriously violate this fundamental principle.

Each exercise, excepting in a few unusual cases, should be thoroughly learned before advancing to the next. Progress over insufficiently learned lessons is building on the sand—children who learn to add well, subtract, multiply and divide better than those who don't. Besides it is only when an exercise is thoroughly learned and accurately performed that the most benefits are derived from it.

Crampton sides with this point of view in the following statement. "Well-known exercises, completely known to the students permit them to focus all of their attention upon accuracy and alertness. Such exercises in a psychological sense are always simple, for there exists in the minds prearranged coördination paths. Old familiar exercises are, as a rule, the best. The teacher who continuously needs something new to interest her class lacks the ability to make anything interesting."

Knudsen likewise sides with this point of view. He says: "One must not go forward too rapidly. Young teachers have not gained by experience sufficient understanding of and sufficiently sharp eyes to distinguish the importance of form. They often forget that exercises which are easy for themselves are difficult for their pupils and unthinkingly take for granted that the latter must have just as hard exercises as they themselves need if their interest is to be kept up. The result is they pass over the harder exercises too quickly."

On the other hand, to use the same drill day in and day out,

week in and week out, year in and year out, is equally as great an abuse. The writer knows one physical director who has but one set drill in his stock of trade. This drill, he admitted himself, had been used with all classes with only one change for over four years. He learned it in the army and felt that it was sufficient to the needs of all classes. This is by no means an isolated case. The writer is familiar with a score nearly as bad. The whole point is that it is an absolute impossibility to include all of the needed and useful exercises in one drill and the work loses considerable of its inherent interest if changes are never made.

(e) Frequency of Changing Exercises

The reader is perhaps now wondering how frequently the changes should be made. This, of course, varies with the differing local conditions; the ability of the class, the ability of the teacher, the frequency of meeting, the time element, and other factors enter into and help determine the exact time for changing. But, for the sake of providing an indicatory figure, one or two drills a semester, under normal conditions, should be ample. Some instructors may feel that this is an insufficient number, but when one stops to figure that each drill is to be totally different, or nearly so, and that from the fourth grade through the college there are thirteen years of work, making a total of from twenty-six to fifty-two almost completely different drills, there comes a change of attitude. It must be recalled that it is far better to have the students learn and perform a few drills well than to have them merely "go through," in slip-shod fashion, ever-changing sets of exercises.

There are, however, additional arguments favoring this seemingly slow progress. In the first place by using only one or two drills a semester time can be taken to shape up drills that are thoroughly good and sound. No instructor can be expected to spend the time and energy to work out a sound drill for every week in the school year. And when lesson plans are drawn up by a supervisor or selected from another source, such as a textbook or syllabus, the average instructor cannot teach them with readiness. Under these conditions teaching must be carried on directly from the book or with a paper in the hand. Teaching of this sort is both laborious and inefficient. The best work is done when both the teacher and the class know the exercises.

(f) Method of Changing

There is some question as to how the change should be made. Should the old drill be dropped in "toto," and the new taken up by the same token, or should new exercises be occasionally inserted over the course of eight or ten lessons at the end of which we would have a complete new lesson? Experiments carried on at the University of Illinois indicate that for school use the former method is better. On the other hand, with adult classes, where attendance is voluntary and consequently irregular, the latter method seems to work out better.

CHAPTER VII

THE GENERAL LESSON PLAN

In shaping up the system of gymnastics devised by his father, Hjalmar Ling hit upon what has come to be one of the classical features of physical training, namely, the Day's Order. Practically every system devised since the origin of this scheme has affected this idea. In drawing up his system Ling carefully determined the specific types of exercises which, to him, appeared most beneficial and then shaped up a number of exercises for each type; in other words, he established families of exercises. In each family there were exercises of all degrees of difficulty adapted to all stages of life and ability. Then he arranged the families in sequence as his notions of physiology and human nature prompted him. With such a plan available the construction of a drill becomes comparatively a simple matter. Bearing in mind the age, strength, and skill of the group being served, one has only to pick an exercise from each family of exercises and present them in the given order and a very suitable drill automatically results. By following this procedure the principles of selection, totality, unity, progression and variety may be readily subserved.

This methodology has been used in formulating the general lesson plan for calisthenics. Due to the complex nature of the several factors involved, it is impossible to construct an order of exercises which can be construed to be absolutely perfect; there is too much conflict of principles. The plan introduced, however, in spite of limiting conditions, will be found to be very practical and satisfactory.

To avoid all possibility of misunderstanding and confusion attention should be called to the fact that the arrangement submitted is, as it is named, a general lesson plan and not a definite lesson plan to be used with all classes. Quite obviously, different groups require different lesson plans, certain groups need fewer exercises, others need more. The general lesson merely covers the fundamental exercise types and presents the general method of

organization. To get the more specific lesson plans for the various groups with whom this work will be used the reader is referred to the chapter dealing with "Programs for Normal Groups."

The general lesson plan is as follows:

1. Arm exercise
2. Trunk turning exercise
3. Leg raising exercise
4. Trunk sideward-bending exercise
5. Neck and chest exercise
6. Trunk forward-bending exercise
7. Heavy leg exercise
8. Trunk lowering exercise
9. Abdominal exercise
10. Special exercise
11. Stepping exercise
12. Breathing exercise.

I. ARM EXERCISES

As the name indicates, arm exercises include all movements involving the use of the arms. They are of two types: the postural type and the limbering-up type. Both types are useful and under different conditions each can be used.

(a) Postural Type

The postural type, or as it is sometimes called, the shoulder retractor type, develops and strengthens the upper back and scapular muscles, lengthens the pectoral muscles, and develops neuromusclar control throughout the entire shoulder region, thus aiding in the cultivation of the posture sense, especially in the upper region of the thorax. The immediate hygienic benefits of these exercises, except when they are combined with other exercises, is quite limited; the circulation and respiration is increased only a trifle, and the amount of mechanical stimulation is not great. Motor control is also developed in the region effected. Comparatively, however, these aspects are insignificant. The principal value of this type of arm exercise is to be found in its postural effect.

There are a considerable number of excellent shoulder retractor arm exercises. They involve, principally, placing the arms in the several extended positions. A few of the best are as follows:

The Butterfly

Starting position. Standing erect.

1. Hands sideward.
2. Hands normal.

The Stretcher.

Starting position. Standing erect.

1. Hands at shoulders.
2. Hands upward.
3. Hands at shoulders.
4. Hands normal.

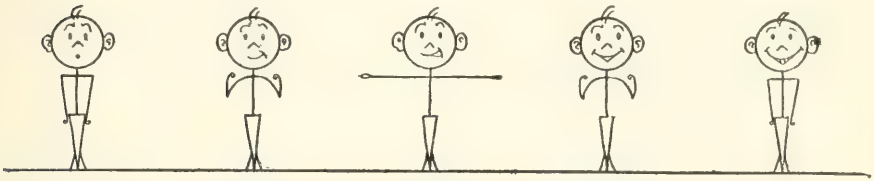


FIG. 91

The Morning Stretcher. (Fig. 91.)

Starting position. Standing erect.

1. Hands at shoulders.
2. Hands sideward.
3. Hands at shoulders.
4. Hands normal.

The Ice Man's Special.

Starting position. Standing erect, hands sideward.

1. Hands wrapped around chest.
2. Hands sideward.

The Signaler.

Starting position. Standing erect.

1. Hands sideward.
2. Hands upward.
3. Hands sideward.
4. Hands normal.

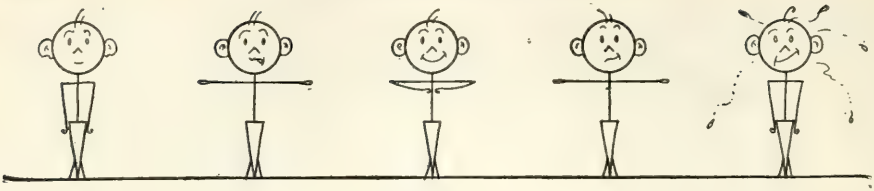


FIG. 92

The Side Flinger. (Fig. 92.)

Starting position. Standing erect.

1. Hands sideward.
2. Hands at chest.
3. Hands sideward.
4. Hands normal.

The Uplifter.

Starting position. Standing erect.

1. Hands on neck.
2. Hands upward.
3. Hands on neck.
4. Hands normal.

The Wig-Wag.

Starting position. Standing erect.

1. Hands upward.
2. Hands sideward.
3. Hands upward.
4. Hands normal.

The Shoulder Puller.

Starting position. Standing erect.

1. Hands forward.
2. Hands backward.
3. Hands forward.
4. Hands normal.

The Elbow Puller.

Standing position. Standing erect.

1. Hands forward.
2. Hands at waist.
3. Hands forward.
4. Hands normal.

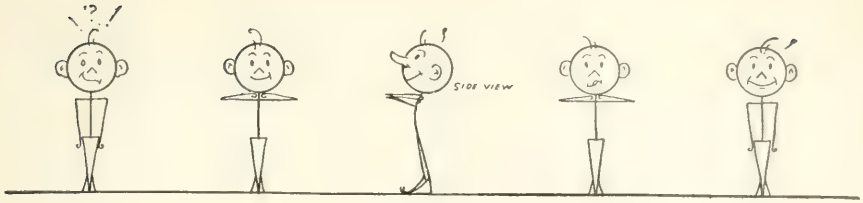


FIG. 93

The Wing Flapper. (Fig. 93.)

Starting position. Standing erect.

1. Hands on neck.
2. Elbows forward.
3. Elbows sideward.
4. Hands normal.

The Wing Flipper.

Starting position. Standing erect, hands on shoulders.

1. Elbows forward.
2. Elbows normal.

The Thruster.

Starting position. Standing erect, hands at waist.

1. Hands sideward.
2. Hands at waist.
3. Hands forward.
4. Hands at waist.

The shoulder retractor arm exercises combine very satisfactorily with foot placings as follows:

The Bob-o-Link.

Starting position. Standing erect.

1. Hands upward, heels upward.
2. Hands normal, heels normal.

In the above exercise the arms should be raised and lowered through the lateral plane.

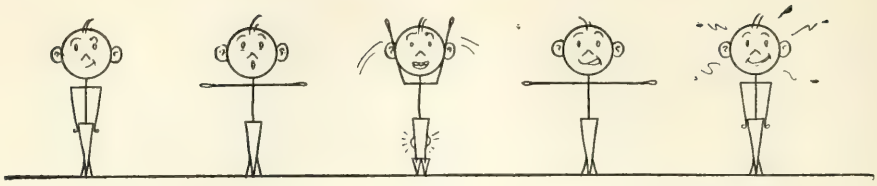


FIG. 94

The Semaphore. (Fig. 94.)

Starting position. Standing erect.

1. Hands sideward.
2. Hands upward, heels upward.
3. Hands sideward, heels normal.
4. Hands normal.

The Step Stretcher.

Starting position. Standing erect.

1. Hands at shoulders, right foot sideward.
2. Heels upward, hands upward.
3. Heels normal, hands at shoulders.
4. Hands and feet normal.

5-8. Same to left.

The Hold Up.

Starting position. Standing erect, hands on neck.

1. Hands upward, right foot forward, heels upward.
2. Hands on neck, right foot normal, heels normal.
3. Hands upward, left foot forward, heels upward.
4. Hands upward, left foot normal, heels normal.

The Scare Crow.

Starting position. Standing erect.

1. Feet apart, hands sideward.
2. Heels upward, hands upward.
3. Heels normal, hands sideward.
4. Feet and hands normal.

(b) Limbering-up Type

The limbering-up type of arm exercises is considerably more varied, including rotations and circumductions of the arms at the

shoulder joints, flexions and extensions of the forearms, flexions and extensions of the wrist, shakings of the hands, and flexions and extensions of the fingers. These exercises are principally valued for their suppleness effects; the shoulder joints, elbow joints, wrist joints and finger joints are loosened. Done vigorously some produce considerable hygienic reaction, stirring up the circulation and respiration thoroughly, while others produce effects that are practically negligible in this respect. They do not aid posture and in some cases they may have an opposite effect. In a limited way they develop control in the upper extremities.

Of a host of these exercises the following are representative examples:

The Outward Circler.

The extended arms are swung with a continuous movement through the lateral plane, both arms being in the same relative position at the same time. The circles are made with considerable speed. The successive positions for each arm are as follows:

1. Across in front.
2. Upward.
3. Sideward.
4. Downward.

The Inward Circler.

This exercise is the reverse of the Outward Circler. The successive positions of the arms are as follows:

1. Sideward.
2. Upward.
3. Across in front.
4. Downward.

The Shaker.

The arms, held very loosely, are shaken vigorously from ten to fifteen times successively in each of the following positions. The class changes to each successive position on commands made by the instructor.

1. Forward.
2. Upward.
3. Sideward.
4. Normal.

The Shoulder Roller.

With the arms held in their normal positions the shoulders are pushed in the following directions continuously and successively:

1. Forward.
2. Upward.
3. Backward.
4. Downward.

The Forward Windmill.

Starting with the left arm forward and the right arm backward the arms are continuously circled forward, both arms retaining their same relative position. The successive positions taken by the arms are as follows:

1. Forward.
2. Downward.
3. Backward.
4. Upward.

The Backward Windmill.

This exercise is executed on the same principle as the forward windmill with the difference that the arms are circled backward. The successive positions taken by the arms are:

1. Forward.
2. Upward.
3. Backward.
4. Downward.

The Reverse Windmill.

Starting with the left arm forward and the right arm backward the left arm is circled forward while the right arm is circled backward. The arms thus pass each other in the downward and upward positions. (The arms may be circled in the opposite directions also.)

II. TRUNK TURNING EXERCISES

Strictly speaking, there is but one trunk turning exercise; we may vary it by working in different planes, using the arms differently, and changing the base, but always it remains fundamentally the same exercise, merely turning the trunk. Trunk turning exer-

cises are given for the purpose of exercising the intercostal, oblique, transverse, and other muscles attached to the sides of the trunk box and the pelvic girdle, and at the same time giving the contents of the abdominal and thoracic cavity a good massaging and churning. This squeezing and twisting of the trunk has an excellent effect on the vital processes of digestion, elimination, respiration and circulation. By exercising the muscles of this region we secure a good blood flow to the stomach and intestines, thereby further aiding the processes of digestion and assimilation. To take care of the extra amount of carbon dioxide in the blood the respiration is increased. By squeezing and massaging the intestines we mechanically aid the normal peristaltic action and thus facilitate movement and evacuation. The liver, kidneys and spleen are activated. The interstitial glands so vital to good physical condition are vigorously stimulated. And, in addition to these benefits, the twisting of the spine serves as a splendid activator of the sympathetic nervous system.

It will be seen, thus, that turning the trunk is an exceptionally fine hygienic exercise. It is, perhaps, in an all-around way, the best type of hygienic exercise that can be designed. In addition it offers splendid suppleness effects, limbering up the entire thoracic cage, and develops body control to a considerable extent. The only score on which the exercise fails to measure up is in posture. It offers no definite postural benefits and in some cases it may produce decided counter-effects.

The following trunk turning exercises are very effective:

Fig. 95

The Toe Tapper. (Fig. 95.)

Starting position. Standing erect.

1. Trunk turned right, hands sideward.
2. Trunk turned left and bent forward, right hand touching left toe.

3. Trunk raised and turned right, hands sideward.
4. Trunk normal, hands normal.
5-8. Same left.

The Traffic Cop

Starting position. Standing erect, hands on hips.

1. Trunk turned right, right hand sideward.
2. Trunk normal, right hand on hip.
3. Trunk turned left, left hand sideward.
4. Trunk normal, left hand on hip.

The Weather-Vane

Starting position. Feet apart, hands sideward.

1. Trunk turned right.
2. Trunk turned left.

FIG. 96

The See-Saw. (Fig. 96.)

Starting position. Feet apart, trunk lowered, hands sideward.

1. Trunk turned left, right hand touching floor.
2. Trunk turned right, left hand touching floor.

The Knee Toucher

Starting position. Standing erect, feet wide apart, hands at shoulders.

1. Trunk turned right, left hand touching outside of right knee.
2. Trunk normal, hands at shoulders.
3. Trunk turned left, right hand touching outside of left knee.
4. Trunk normal, hands at shoulders.

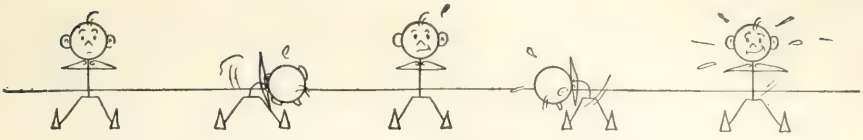


FIG. 97

The Wind Jammer. (Fig. 97.)

Starting position. Seat on floor, feet apart, hands on neck.

1. Trunk bent forward and turned left, right elbow on left knee.
2. Trunk normal.
3. Trunk bent forward and turned right, left elbow on right knee.
4. Trunk normal.

The Fanner

Starting position. Standing erect, feet apart.

1. Trunk turned right, right arm wrapped around the back, left arm wrapped forward around the waist.
2. Trunk turned left, left arm wrapped around the back, right arm wrapped forward around the waist.

The Corkscrew.

Starting position. Standing erect, left hand sideward, right hand touching left shoulder.

1. Trunk turned right, right hand sideward, left hand touching right shoulder.
2. Trunk turned left, left hand sideward, right hand touching left shoulder.

The Grinder.

Starting position. Seat on floor, feet wide apart, hands on hips.

1. Trunk bent forward, right hand touching left toe.
2. Trunk normal, right hand on hip.
3. Trunk bent forward, left hand touching right toe.
4. Trunk normal, left hand on hip.

FIG. 98

The Stride Turner. (Fig. 98.)

Starting position. Standing erect.

1. Right foot forward, hands at chest.
2. Trunk turned right, hands sideward.
3. Trunk normal, hands at chest.
4. Right foot and hands normal.

5–8. Same left.

The Step Turner.

Starting position. Standing erect, hands at shoulders.

1. Right foot forward, trunk turned right, hands sideward.
2. Right foot normal, trunk normal, hands at shoulders.
3. Left foot forward, trunk turned left, hands sideward.
4. Left foot normal, trunk normal, hands at shoulders.

III. LEG RAISING EXERCISES

Leg raising exercises involve standing on one foot and raising the other sideward, forward, or backward. They are particularly valuable in developing suppleness in the hip joints and developing strength in the muscles comprising the abdominal wall. These exercises are not so vigorous as a straight abdominal exercise and thus the effect is not so great, yet, done properly, they contribute considerably toward the building-up of this region. A firm abdominal wall, of course, aids in the maintenance of good posture so these exercises have some significance as a contributing factor in posture training. A strong abdominal wall holds the abdominal organs in their proper places thus creating the best hygienic conditions. Through contracting and relaxing these muscles the abdominal contents are squeezed and churned in this way further producing organic results which are good. Exercises of this sort thus have both immediate and remote hygienic significance. Leg

control is unquestionably developed through the practice of these exercises also.

A few of the best leg raising exercises are as follows:

The Sideward Kicker.

Starting position. Standing erect.

1. Right foot raised sideward.
2. Right foot normal.
3. Left foot raised sideward.
4. Left foot normal.

The Forward Kicker.

Starting position. Standing erect.

1. Right foot raised forward.
2. Right foot normal.
3. Left foot raised forward.
4. Left foot normal.

FIG. 99

The Knee Raiser. (Fig. 99.)

Starting position. Standing erect.

1. Right knee upward.
2. Right knee normal.
3. Left knee upward.
4. Left knee normal.

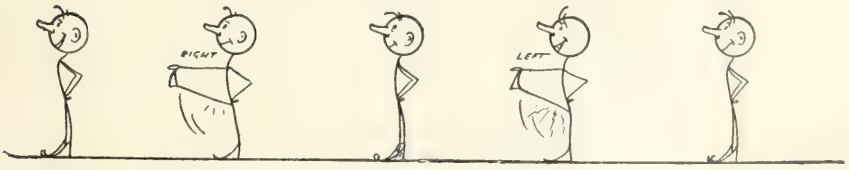


FIG.

The Booter. (Fig. 100.)

Starting position. Standing erect, hands at waist.

1. Right hand forward (shoulder high), kick right hand with right foot.

2. Right hand at waist, right foot normal.
3. Left hand forward (shoulder high), kick left hand with left foot.
4. Left hand at waist, left foot normal.

The Cross Booter.

Starting position. Standing erect, hands on hips.

1. Left hand forward (shoulder high) kick left hand with right foot.
2. Left hand on hip, right foot normal.
3. Right hand forward (shoulder high) kick right hand with left foot.
4. Right hand on hip, left foot normal.

The Front-Side Kicker.

Starting position. Standing erect, hands on hips.

1. Right foot raised sideward.
2. Right foot normal.
3. Right foot raised forward.
4. Right foot normal.

5–8. Same with left foot.

Fig. 101

The Stork. (Fig. 101.)

Starting position. Standing erect, hands on hips.

1. Right knee raised forward.
2. Right foot raised sideward.
3. Right knee raised forward.
4. Right knee normal.

5–8. Same with left foot.

The Equilibrator.

Starting position. Standing erect, hands on hips.

1. Right foot raised sideward.
2. Right foot raised forward.

3. Right foot raised sideward.
4. Right foot normal.
5–8. Same with left foot.

The Punter.

Starting position. Standing erect.

1. Right toe touched backward.
2. Right foot raised (kick vigorously) forward.
3. Right toe touched backward.
4. Right foot normal.
5–8. Same with left foot.

IV. TRUNK SIDEWARD-BENDING EXERCISES

Trunk sideward-bending exercises, as its name indicates, consists solely of exercises wherein the trunk is swayed laterally from its normal position. These exercises have the effect of exercising the lateral muscles encasing the thoracic and abdominal cavities, giving the contents of these same cavities a good churning and massaging, thereby stimulating the digestive, eliminatory, circulatory, and respiratory systems, stimulating the spinal cord and sympathetic nervous system, limbering up the entire trunk box, and increasing the flexibility of the spine.

Skarstrom, discussing lateral trunk exercises, which is another name for trunk sideward-bending exercises (and incidentally includes trunk turning exercises) says: "As its name implies, the localization of the muscular action is primarily in the waist or loin region; but the hips and thigh muscles are also strongly active in these exercises. There being no lateral trunk muscles, properly speaking, the contiguous abdominal and back muscles of each side act together in such types as side bending and leg moving sideways.

"Exercise of this group involves fairly wide distribution of muscular action. When of vigorous nature (and most of them are or may be) the total quantity of work is therefore considerable. The organs of circulation and respiration are correspondingly active. Besides these general effects, lateral trunk exercises influence the various organic functions in special ways. The circulation in the abdominal cavity and especially the portal flow is stimulated and aided by the alternate compression and stretching of the organs. The variations of intra-abdominal pressure and tension also

mechanically stimulate the intestine to more vigorous peristalsis.

"The development and increased control of the abdominal and back muscles is another valuable feature of lateral trunk exercise. The average person of sedentary habits is greatly in need of this kind of training. The ordinary movements of daily life rarely call for a complete or varied action of these large and important muscle groups. This is particularly true as regards the abdominal muscles, which are so often undeveloped, relaxed and covered with fat."

Because we rarely exercise the trunk in this way the trunk tends to become stiff and awkward; vigorous exercises of this sort serve to limber up the entire chest box and, through stretching the erector spinæ and scaleni muscles, increased the flexibility of the spine. These exercises also produce increased circulation through the spinal canal and mechanically stimulate the cord as well as the spinal ganglia situated just outside of the spinal column, in both ways enlivening and toning up these important nervous areas.

In summary, bending the trunk sideward develops suppleness and body control, effects hygienic reactions that are both immediate and permanent, but does not specifically contribute to the improvement of posture.

A few of the best trunk sideward-bending exercises are as follows:

The Side Bender.

Starting position. Feet apart, hands on neck.

1. Trunk bent right, hands upward.
2. Trunk normal, hands on neck.
3. Trunk bent left, hands upward.
4. Trunk normal, hands on neck.

The Liver Squeezer.

Starting position. Feet apart, hands upward with fingers interlocked.

1. Trunk bent right.
2. Trunk normal.
3. Trunk bent left.
4. Trunk normal.

The Grand Liver Squeezer.

Starting position. Feet apart, hands upward with fingers interlocked.

1. Trunk bent right.
2. Trunk bent left.

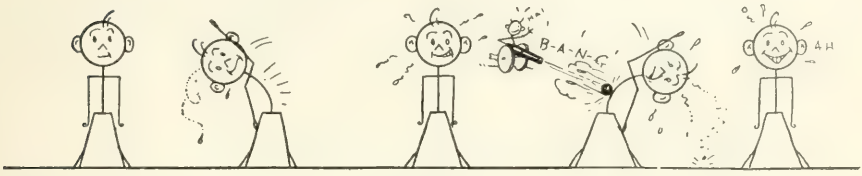


FIG. 102

The Intercostal Stretcher. (Fig. 102.)

Starting position. Feet apart.

1. Left hand upward, trunk bent right.
2. Hand and trunk normal.
3. Right hand upward, trunk bent left.
4. Hand and trunk normal.

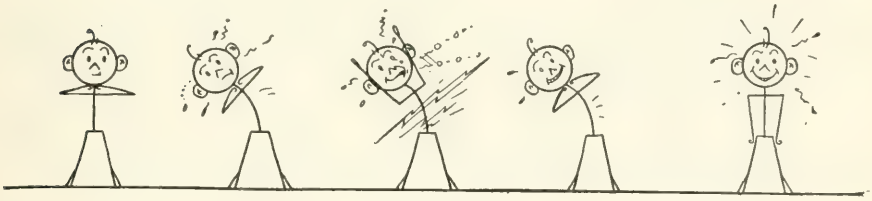


FIG. 103

The Bend Stretcher. (Fig. 103.)

Starting position. Feet apart, hands on neck.

1. Trunk bent right.
2. Hands upward.
3. Hands on neck.
4. Trunk normal.

5–8. Same to left.

The Rib Raiser.

Starting position. Standing erect.

1. Right foot sideward, hands at shoulders.
2. Trunk bent right, hands upward.
3. Trunk normal, hands at shoulders.
4. Right foot and hands normal.

5–8. Same exercise other side.

The Chorus Girl's Special.

Starting position. Feet apart, hands on neck.

1. Trunk bent right, right hand touching outside of right knee.
2. Trunk normal, right hand on neck.
3. Trunk bent left, left hand touching outside of left knee.
4. Trunk normal, left hand on neck.

The Rib Crusher.

Starting position. Feet wide apart, hands on neck.

1. Trunk bent right, right elbow touching right knee, right knee bent slightly.
2. Trunk normal, right knee normal.
3. Trunk bent left, left elbow touching left knee, left knee bent slightly.
4. Trunk normal, left knee normal.

The Steamboat.

Starting position. Standing erect, feet wide apart, arms sideward.

1. Trunk bent right, right knee slightly bent, right hand on floor.
2. Trunk bent left, left knee slightly bent, left hand on floor.

FIG. 104

The Side Swayer. (Fig. 104.)

Starting position. Standing erect, feet wide apart, arms sideward.

1. Trunk bent right, right hand on right toe.
2. Trunk normal.
3. Trunk bent left, left hand on left toe.
4. Trunk normal.

The Teeter-Totter.

Starting position. Standing erect, feet apart, left hand upward.

1. Right knee quarter bent, trunk bent left, right hand upward, left hand on side of left knee.
2. Left knee quarter bent, right knee normal, trunk bent right, left hand upward, right hand at side of right knee.

V. NECK AND CHEST EXERCISES

This family includes singly, or in combination, the exercises of lifting the chest and pressing, bending and turning the head. To each of these is added the exercise of drawing in the abdomen. They are given for the purpose of improving the set-up of the individual. The neck exercises, by strengthening the posterior muscles of the neck and upper back, tend to give the lift to the head that is so necessary to upright carriage. The chest exercises by strengthening the muscles involved in lifting the chest tend to produce that full-rounded bearing so distinctive in the soldier. And by drawing in the abdomen, thereby strengthening the muscles which hold the abdominal contents in place, we remove the condition commonly known as protruding abdomen.

Together these exercises have a marked effect also in eliminating the harmful cervical and dorsal curves in the spine so commonly seen to-day. The exercises of this group represent posture training more distinctly and exclusively than those of any other group. They are so defined that when properly executed they tend to exert an influence on posture in the upper part of the body diametrically opposite to that exerted by the conditions of daily life, and especially those conditions associated with sedentary occupations.

The necessity for strong, vigorous neck exercises is less widely appreciated than the necessity for any other type of exercise. Speaking on this matter, Crampton says:

"The neck is one of the most important and neglected regions of the body. The cervical spine holds up the head. It surrounds and protects the spinal cord, which in this locality controls the great body processes of circulation, respiration, heat production, and to a great degree, digestion and nutrition. Yet, these bones

are frequently badly adjusted to each other, and frequently the spinal column of the neck sags forward and downward.

"In the neck are the four great arteries which bring blood to the brain and the big jugular veins through which it is returned from the head. The thyroid gland is saddled across the front of the neck, and this has an exceedingly important function in maintaining the nutrition of the body. Tucked away on either side of the throat, in a fold between the larynx and the lateral neck muscles, are three sympathetic ganglia which constitute in effect the executive managers of the circulation and respiration.

"It will be seen that the neck is an important segment of the human body. Necks are as characteristic as faces, and they tell the story of weakness, power, vitality, illness, past and present, and even prophesy illness to come. That neck which has fine, strong, muscular pillars on either side running from the ears down to the junction of the clavicle and sternum, and heavy posterior masses of powerful muscle running from the occiput back to the spine and scapula—that neck, is, indeed, likely to be surmounted with a head worth while in this generation of high deeds and great events.

"Few people realize what tremendous value that is in a well-muscled neck. It holds the head high. Thus the circulation of the neck itself is improved in all its various important parts, the spine, the cervical central nervous system, the sympathetic ganglia, and even the larynx and the esophagus. The high-held head puts these various parts in their proper position. The low-drooped head falls in upon itself and allows each part to discommode itself and its neighbor."

Chest exercises, as advocated here, call for a lifting of the chest, but, of equal importance, they call for a lifting of the abdomen. The abdomen should be drawn in and up with each exercise. The importance of this exercise cannot be overestimated. In the first place by means of this exercise the chest is lifted (provided the exercise is done properly with head held well up and firm); the sternocleidomastoid muscle actively lifts the clavicle, which subsequently elevates the entire chest. Lifting the chest in this way gives the heart, lungs and stomach more freedom and eliminates abnormal pressure on the same, thereby removing a common cause for interference with organic functioning.

Drawing the abdomen in and up gives training in voluntary control of the abdominal muscles. It forces the abdominal contents into the upper region. The muscles interested in holding the contents in this position (the diaphragm, the obliques and various minor abdominal and thoracic muscles) are trained and developed to hold this position. In this position the abdominal organs are prevented from sagging down upon each other; each rests in its proper position and the evil effects of constant pressure and malposition concommitant to sagging are thus avoided. The effect of this exercise on breathing and on the circulation, especially in the large abdominal veins and the portal system, must also be apparent. In addition to these benefits the exercise has the effect of tilting the pelvis forward and decreasing the lumbar curve.

To the untutored these two exercises (neck and chest) seem totally different; yet in actual fact they have many points in common and react upon each other. Correcting the position of the head, for instance, through pulling on the sternocleidomastoid muscle, raises the clavicle and ribs and thus may raise the diaphragm, liver and stomach an inch or more. Likewise when lifting the chest the posterior neck muscles must be set firmly; otherwise the head will be pulled forward. While both types of exercises are included in this section of the day's order it is sufficient to use only one in each lesson. The two exercises should be used alternately in the construction of successive lessons, or both may be used in combination.

The following neck and chest exercises are of the very best:

FIG. 105

The Neck Presser. (Fig. 105.)

Starting position. Standing erect, hands on hips.

1. Head pressed backward.
2. Head normal.

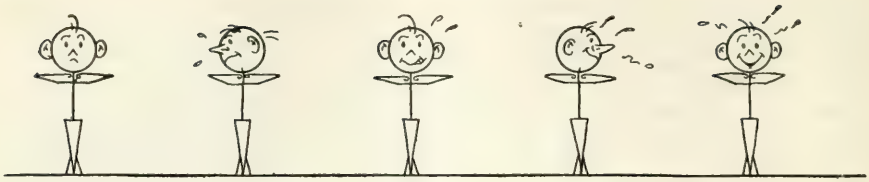


FIG. 106

The Neck Twister. (Fig. 106.)

Starting position. Standing erect, hands on neck.

1. Head turned right and pressed backward.
2. Head normal.
3. Head turned left and pressed backward.
4. Head normal.

The Neck Straightener.

Starting position. Standing erect, hands on hips.

1. Head pressed backward.
2. Head bent forward (chin on chest).
3. Head pressed backward.
4. Head normal.

The Star Gazer

Starting position. Standing erect, hands on neck.

1. Head bent forward, elbows forward.
2. Head bent backward, elbows sideward.

The Nodder

Starting position. Standing erect, hands on hips.

1. Head bent forward.
2. Head bent backward.

The Adam's Apple Crusher.

Starting position. Standing erect, hands on hips.

1. Head bent forward.
2. Head pressed backward.
3. Head bent backward.
4. Head normal.

The Shoulder Tap

Starting position. Standing erect, hands on hips.

1. Head turned right and pressed backward.

2. Head bent forward (press chin toward right shoulder).
3. Head bent backward (attempt to place back of head on left shoulder).
4. Head normal.

5–8. Same to left.

The Neck Wringer.

Starting position. Standing erect, hands on hips.

1. Head bent forward.
2. Head turned right and pressed backward.
3. Head bent forward.
4. Head turned left and pressed backward.

The Chest Lifter.

Starting position. Standing erect, hands on neck.

1. Chest upward.
2. Chest normal.

Chesty Charlie.

Starting position. Standing erect, hands on hips.

1. Chest upward.
2. Head pressed backward.
3. Head normal.
4. Chest normal.

The Rib Stretcher.

Starting position. Standing erect, hands on neck.

1. Right side of chest upward.
2. Right side of chest normal.
3. Left side of chest upward.
4. Left side of chest normal.

VI. TRUNK FORWARD-BENDING EXERCISES

Trunk forward-bending exercises (frequently called downward-bending and forward-downward-bending) consist of stooping forward or bending the trunk forward at the waist. These exercises are given primarily for the purpose of removing or preventing

the development of hyper-extension in the lower back. This is effected mostly through stretching the erector spinæ, which is so large and powerful in the small of the back and the quadratus lumborum, which is also located here. By inducing a marked straightening and even a reversing of the posteriorly concave curve of the lumbar region these exercises also have the effect of temporarily altering the pressure and tension of the joint surfaces, intervertebral disks, ligaments and nerves in this region of the spine. Circulation is also favorably influenced by these temporary changes.

All of this produces a feeling of relief that seems to jointly relax and stimulate the entire body. When vigorously performed with the knees kept straight these exercises also have the effect of stretching the posterior leg muscles, tendons and ligaments, and is especially helpful in getting a powerful stretching of the muscles over the buttocks. The exercises of this group thus have a tremendous hygienic effect. In summary, then, this family of exercises is primarily significant for its postural, suppleness and hygienic effects.

A few of the better trunk forward-bending exercises are as follows:

The Compressor.

Starting position. Feet wide apart, hands sideward.

1. Trunk bent forward (chest on right knee), arms wrapped about right knee.
2. Trunk normal, hands sideward.
3. Trunk bent forward (chest on left knee), arms wrapped about left knee.
4. Trunk normal, hands sideward.

Limber Louie.

Starting position. Standing erect, hands on hips.

1. Trunk bent forward (nose near knees).
2. Trunk normal.

The Berry Picker.

Starting position. Standing erect, hands at waist.

1. Trunk bent forward, hands touching toes.
2. Trunk normal, hands at waist.

FIG. 107

The Belly Massage. (Fig. 107.)

Starting position. Feet apart, hands at waist.

1. Trunk bent forward, hands backward between legs.
2. Trunk normal, hands at waist.

FIG. 108

The Kow Tow. (Fig. 108.)

Starting position. Feet apart, hands upward.

1. Trunk bent forward, hands touching toes (right hand on right toe, left hand on left toe).
2. Trunk normal, hands upward.

The Forward Bender.

Starting position. Standing erect, feet apart, hands on neck.

1. Trunk bent forward, elbows forward touching knees (right elbow on right knee, left elbow on left knee).
2. Trunk normal, elbows normal.

The Double Bender.

Starting position. Standing erect, feet wide apart.

1. Trunk bent forward, both hands touching right toe.
2. Trunk bent forward, both hands touching left toe.

The Triple Bender.

Starting position. Standing erect, feet apart.

1. Trunk bent forward, both hands touching right toe.
2. Both hands touching floor midway between feet.

3. Both hands touching left toe.
4. Trunk normal, hands normal.

FIG. 109

The Reaper. (Fig. 109.)

Starting position. Standing erect.

1. Right foot forward, hands at waist.
2. Trunk bent forward, hands touching floor.
3. Trunk normal, hands at waist.
4. Right foot normal, hands normal.

5–8. Same with left foot.

The Grand Swoop.

Starting position. Feet apart, hands sideward.

1. Trunk bent forward, hands backward between legs.
2. Trunk normal, hands sideward.
3. Trunk bent forward, hands touching toes (right hand on right toe, left hand on left toe).
4. Trunk normal, hands sideward.

The Hunch Back.

Starting position. Feet wide apart, hands on hips.

1. Trunk bent forward, hands touching toes (right hand on right toe, left hand on left toe).
2. Hands touching floor midway between feet.
3. Hands touching toes (right hand on right toe, left hand on left toe).
4. Trunk normal, hands on hips.

The Perspiration Special.

Starting position. Standing erect, feet apart.

1. Right hand upward.
2. Trunk bent forward, right hand touching left toe.
3. Trunk normal, right hand upward.

4. Right hand normal.
5–8. Same with left arm.

VII. HEAVY LEG EXERCISES

Heavy leg exercises, as specified here, include knee bending with the legs in various positions, lunging, rising on the toes (heel raising), charging and various combinations of the same. Running in place, hopping in place, jumping in place, dancing steps and similar exercises are not included in this group; these are included in the stepping family. Exercises which involve lifting the legs are likewise not included here; these are included in the leg-raising group. Heavy leg exercises are given for the purpose of exercising and strengthening the leg muscles and limbering up the joints of the hips, knees and ankles. Exercising the large groups of muscles which are located in the legs also has the effect of strongly stimulating circulation and respiration.

Speaking of heavy leg exercises, Skarstrom points out that besides these general effects, "the exercises of this group develop size, strength and coördination of the leg muscles in a most effective manner. This is particularly true of the deep knee bendings and the lunges which employ complete range of contraction, or great speed, or both, of all the muscular groups from the hips down. For this reason as well as on account of their general effects, they should not be left out of the lesson even if the public consider that they get enough leg work in other ways, such as walking, running, standing for long periods of time, etc." Heavy leg exercises, therefore, are hygienic in a large way, and make for suppleness, general muscular strength and agility in the legs.

The following heavy leg exercises are good samples of this type:

FIG. 110

The Knee Bender. (Fig. 110.)

Starting position. Standing erect, hands on hips.

1. Knees half bent.
2. Knees fully bent.
3. Knees half bent.
4. Knees normal.

The Knee Cracker.

Starting position. Standing erect.

1. Knees fully bent, hands upward.
2. Knees normal and hands normal.

FIG. 111

The Stretch Bender. (Fig. 111.)

Starting position. Standing erect.

1. Heels raised, hands sideward.
2. Knees fully bent, hands upward.
3. Knees normal (heels raised) hands sideward.
4. Hands and heels normal.

The Bounder.

Starting position. Standing erect, hands on hips.

1. Knees fully bent.
2. Bound in place (knees are half straightened and immediately fully bent).
3. Bound in place (knees are half straightened and immediately fully bent).
4. Knees normal.

The Bear Dance.

Starting position. Knees fully bent, right foot forward, hands on hips (weight on left foot).

1. Right foot normal, left foot forward (weight on the right foot—secured by a jumping movement).
2. Left foot normal, right foot forward (weight on the left foot—secured by a jumping movement).

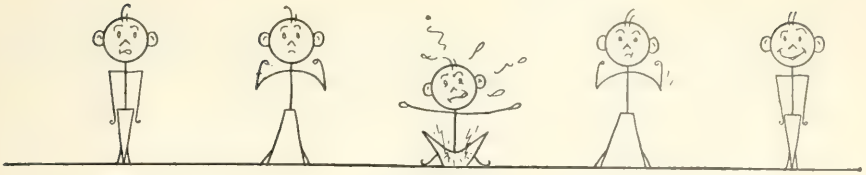


FIG. 112

The Straddle Bend. (Fig. 112.)

Starting position. Standing erect.

1. Right foot sideward, hands at shoulders.
2. Knees fully bent, hands sideward.
3. Knees normal, hands at shoulders.
4. Right foot normal, hands normal.

The Knee Toucher.

Starting position. Standing erect, feet stride right, hands on hips.

1. Left knee on floor (weight on right leg).
2. Knees normal.

NOTE: This exercise should also be done in the feet stride left position.

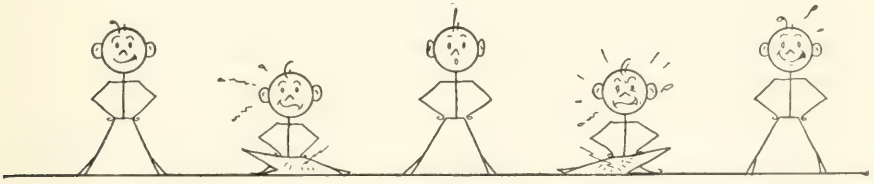


FIG. 113

The Weight Shifter. (Fig. 113.)

Starting position. Standing erect, feet wide apart, hands on hips.

1. Right knee fully bent (weight on right leg).
2. Right knee normal.
3. Left knee fully bent (weight on left leg).
4. Left knee normal.

The Oblique Charge.

Starting position. Standing erect.

1. Right foot charged forward-oblique, right hand upward.

2. Right hand normal, right foot normal.
3. Left foot charged forward-oblique, left hand upward.
4. Left hand normal, left foot normal.

The Forward Lunger.

Starting position. Standing erect, hands on hips.

1. Right foot lunged forward.
2. Right foot normal.
3. Left foot lunged forward.
4. Left foot normal.

Fig. 114

The Sideward Step Lunger. (Fig. 114.)

Starting position. Standing erect.

1. Right foot sideward, hands at shoulders.
2. Right foot lunged sideward, hands upward.
3. Right foot sideward, hands at shoulders.
4. Right foot and hands normal.

5–8. Same left.

The Knee Buster—Forward.

Starting position. Knees fully bent, hands on hips.

1. Right foot forward (heel touching floor—weight on left foot).
2. Right foot normal (weight on both feet).
3. Left foot forward (heel touching floor—weight on right foot).
4. Left foot normal (weight on both feet).

The Knee Buster—Sideward.

Starting position. Knees fully bent, hands on hips.

1. Right foot sideward (weight on left foot).
2. Right foot normal (weight on both feet).
3. Left foot sideward (weight on right foot).
4. Left foot normal (weight on both feet).

The Squat and Spread.

Starting position. Standing erect.

1. Knees fully bent, hands between legs, touching toes.
2. Feet apart, toes raised, hands sideward-upward (secured by a jumping movement).
3. Feet together, knees fully bent, hands between legs, touching toes (secured by a jumping movement).
4. Feet apart, toes raised, hands sideward-upward (secured by a jumping movement).

VIII. TRUNK LOWERING EXERCISES

Trunk lowering is frequently confused with trunk forward-bending. The two exercises, however, are entirely different; in the first instance, the body is bent only at the hips and the spine is kept straight throughout its entire length; in the second instance, the body is bent at the waist as well as the hips, the back is humped or flexed throughout its entire length. Strictly speaking, there are only two trunk lowering exercises, trunk half lower, and trunk lower. These two exercises, however, are often varied by holding the arms in different positions and changing the standing position.

Trunk lowering exercises are given for the purpose of producing the so-called "flat back." Correctly and consistently performed these exercises are extremely effective in wiping out the ugly lumbar and dorsal curves. The erector spinæ in the lumbar region and the quadratus lumborum are exercised in the extended position helping to wipe out the lumbar curve; the erector spinæ in the dorsal region are exercised in a shortened position tending to wipe out the dorsal curve. The retractor muscles of the shoulders and the dorsal muscles of the neck, in holding the head and shoulders in their proper positions, are also called into vigorous play, thereby, in a secondary way, helping to set up these parts in positions that are posturally desirable. Exercising such large groups of muscles combined with the positive strain incident to holding the positions correctly stimulates vigorous organic reaction. Trunk lowering exercises, therefore, have extraordinary postural and hygienic values. Flexibility, particularly in the lower back and pelvic regions, is also induced.

The following trunk-lowering exercises are excellent:

The Mechanical Doll.

Starting position. Standing erect, hands on hips.

1. Trunk lowered.
2. Trunk normal.

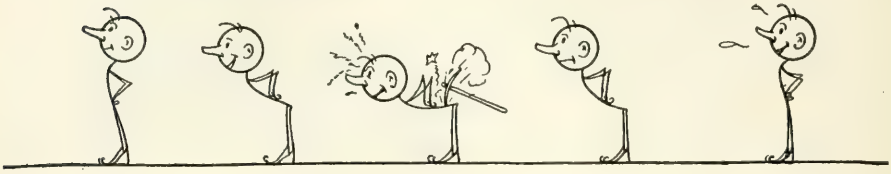


FIG. 115

The Wooden Soldier. (Fig. 115.)

Starting position. Standing erect, hands on hips.

1. Trunk half lowered.
2. Trunk lowered.
3. Trunk half lowered.
4. Trunk normal.

The Double Bow.

Starting position. Standing erect, hands clasped behind back.

1. Trunk half lowered.
2. Trunk normal.
3. Trunk lowered.
4. Trunk normal.

The Salaam.

Starting position. Standing erect, feet apart.

1. Trunk half lowered, hands at chest.
2. Trunk lowered, hands sideward.
3. Trunk half lowered, hands at chest.
4. Trunk normal, hands normal.

Painful Perry. (Fig. 116.)

Starting position. Standing erect, hands on neck.

1. Trunk half lowered.
2. Hands upward.
3. Hands on neck.
4. Trunk normal.

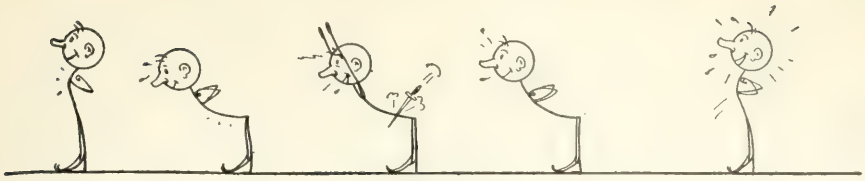


FIG. 116

The Backache.

Starting position. Standing erect, hands at shoulders.

1. Trunk lowered, hands upward.
2. Trunk normal, hands at shoulders.

The Back Flattener.

Starting position. Standing erect, feet apart, hands on neck.

1. Trunk lowered.
2. Trunk half lowered.
3. Trunk lowered.
4. Trunk normal.

The Back Breaker.

Starting position. Standing erect, hands on neck.

1. Trunk half lowered.
2. Elbows forward.
3. Elbows sideward.
4. Trunk normal.

The Rhomboid Special.

Starting position. Standing erect.

1. Trunk lowered, hands sideward.
2. Hands forward. (Note: In this instance, the arms are extended toward the floor).
3. Hands sideward.
4. Trunk normal, hands normal.

The Collegians Delight.

Starting position. Standing erect.

1. Trunk lowered, hands at chest.
2. Hands sideward.
3. Hands at chest.
4. Trunk normal, hands normal.

IX. ABDOMINAL EXERCISES

Abdominal exercises include those exercises which call into play, primarily, the muscles covering the abdomen. The best exercises in this family are those performed in the supine position. These include raising the legs, moving them laterally to the several positions, holding them in the various positions, lifting the trunk to the perpendicular position, and combinations of the same. Exercises carried on while sitting on the floor are excellent. Exercises carried on with the body in a reclining position while supported on the hands and feet, are also extremely effective.

While they are not generally recognized as such, the various exercises of raising one foot sideward and forward and raising the knees, while standing in the upright position, are good abdominal exercises also. Likewise trunk turning and trunk sideward-bending have considerable effect on the abdominal muscles. Inasmuch as these exercises are not so effective as the straight abdominal exercises and we have placed for them elsewhere in our lesson plan they should not be included in this group. As outlined here, abdominal exercises are confined strictly to the three main types mentioned above, namely, exercises done in the back on floor position, exercises done in the seat on floor position, and exercises done in the several support positions.

Of the twelve main families of exercises included in our general lesson plan, no one group, perhaps, offers so many benefits and has the all-around significance of this group. By exercising and strengthening the muscles surrounding the abdominal cavity, a great number of benefits accrue. In the first place, if a strong wall is not maintained about the visceral contents, there is a distinct tendency to a forward spilling-out of the same. Upon approaching middle age, unless the individual pursues a course of regular exercise, there is a distinct tendency to the building up of fatty layers over this region which tend to augment this downward pull. When this occurs, besides getting out of normal position itself, the viscera, falling forward, pulls the other organs of the abdomen and thorax out of position. Displaced, none of these organs can function properly; there is a distinct loss of energy and vitality; the individual becomes inert and "loggy." Constipation, bladder trouble, autointoxication, and other diseases frequently exist.

Abdominal exercises tend to relieve all of this. By developing the abdominal muscles the viscera is held in place and incidentally so are the other organs of the region. If there is an accumulation of podgy fat about the waist, this may be reduced; if there is none, its growth may be prevented. In addition, the churning of the abdominal contents combined with the vigorousness of the work are extremely effective in stimulating digestive, eliminatory, circulatory and respiratory reactions. In every way the normal vitality and health of the individual is induced or maintained.

By holding the viscera in and keeping the fatty tissue surrounding the abdomen reduced to a minimum we also remove a condition which is a large contributing cause of bad posture. When either or both of these conditions exist, giving the so-called pot-belly, the pelvis is tipped downward, the center of gravity is thrown forward, and a compensatory backward leaning of the spine is necessitated. This usually results in the exaggeration of the lumbar curve and brings about undesirable pressure on the lumbar vertebra. By strengthening and shortening the muscles over the front of the abdomen we not only prevent the content from spilling forward and thus tipping the pelvis downward, but we produce a condition of tonic activity in these muscles which tends to hold the pelvis up and further remove the possibility of these unfavorable mechanical derangements.

The muscles of the abdomen and waist are also professionally recognized to be the key to general bodily strength,—the individual is strong or weak in direct proportion as the muscles of this region are strong or weak. By developing this region, then, more than any other region, we increase the individual's physical strength. Suppleness, body control and endurance are also favorably influenced by the regular vigorous exercising of this region.

It thus becomes clearly apparent that abdominal exercises are extremely significant in the development and maintenance of physical welfare. Posture, organic vigor, strength, suppleness, endurance, in truth, any factor that can be conceived as physically worth while, may be measurably improved by the exercising of this region.

There are many excellent abdominal exercises. The following are good examples:

The Tattoo.

Starting position. Seat on floor, hands on hips.

1. Feet apart.
2. Feet normal.
3. Feet at buttocks (on floor).
4. Feet normal.

The Fat Man's Special.

Starting position. Seat on floor, hands on neck, feet apart.

1. Trunk bent forward, elbows forward, touching knees (right elbow on right knee, left elbow on left knee).
2. Trunk normal, elbows sideward.

The Rower.

Starting position. Seat on floor, hands at waist.

1. Trunk bent forward, hands on toes.
2. Trunk normal, hands at waist.

The Rocking Chair.

Starting position. Seat on floor.

1. Back on floor, feet upward.
2. Seat on floor.

FIG. 117

The Hamstring Special. (Fig. 117.)

Starting position. Back on floor, hands under buttocks.

1. Knees at chest.
2. Feet upward.
3. Knees at chest.
4. Feet normal.

The Leg Lifter.

Starting position. Back on floor, hands under buttocks.

1. Feet half upward.
2. Feet upward.
3. Feet half upward.
4. Feet normal.

FIG. 118

The Cradle. (Fig. 118.)

Starting position. Back on floor.

1. Feet upward.
2. Feet normal.
3. Seat on floor.
4. Back on floor.

FIG. 119

The Splitter. (Fig. 119.)

Starting position. Back on floor, hands under buttocks.

1. Feet upward.
2. Feet apart.
3. Feet together.
4. Feet normal.

The Scissors.

Starting position. Back on floor, hands under buttocks, right foot upward, left foot one inch off floor.

1. Left foot upward, right foot one inch off floor.
2. Right foot upward, left foot one inch off floor.

The Treadmill.

Starting position. Back on floor, hands under buttocks, right knee at chest.

1. Right foot normal, left knee at chest.
2. Left knee normal, right knee at chest.

The Abdominal Squeezer.

Starting position. Back on floor.

1. Right knee at chest, grasp knee with both hands and pull knee down strongly.

2. Right foot normal, hands normal.
3. Left knee at chest, grasp knee with both hands and pull knee down strongly.
4. Left foot normal, hands normal.

FIG. 120

The Square. (Fig. 120.)

Starting position. Back on floor, hands under buttocks.

1. Feet upward.
2. Feet apart.
3. Feet on floor.
4. Feet normal.

Castor Oil's Daddy.

Starting position. Back on floor, hands under buttocks, feet half upward.

1. Feet upward.
2. Feet backward.
3. Feet upward.
4. Feet half upward.

The Inverted Turtle.

Starting position. Back on floor, feet apart, hands sideward.

1. Feet upward and together, hands upward, touching toes.
2. Feet apart and on floor, hands sideward.

The Dipper.

Starting position. Squat on floor.

1. Front support.
2. Low front support
3. Front support.
4. Squat on floor.

The Front Support Kicker.

Starting position. Front support.

1. Right foot raised backward.
2. Right foot normal.
3. Left foot raised backward.
4. Left foot normal.

The Boncho.

Starting position. Front support.

1. Feet apart.
2. Feet normal.

FIG. 121

The Side Roller. (Fig. 121.)

Starting position. Front support.

1. Right side support.
2. Front support.
3. Left side support.
4. Front support.

The Back Support Kicker.

Starting position. Back support.

1. Right foot upward.
2. Right foot normal.
3. Left foot upward.
4. Left foot normal.

FIG. 122

The Stove Sitter. (Fig. 122.)

Starting position. Seat on floor, hands back of buttocks.

1. Low back support.
2. Back support.
3. Low back support.
4. Seat on floor.

The Side Support Kicker.

Starting position. Right side support.

1. Left foot upward.
2. Left foot normal.

The Hip Wabbler.

Starting position. Right side support.

1. Low right side support.
2. Right side support.

The Alligator Wag.

Starting position. Front elbows support.

1. Right foot sideward.
2. Right foot normal.
3. Left foot sideward.
4. Left foot normal.

The Jacknife.

Starting position. Back elbow support.

1. Feet upward.
2. Feet normal.

The Belly Squasher.

Starting position. Back elbow support, feet one inch off floor.

1. Right knee at chest.
2. Right foot one inch off floor.
3. Left knee at chest.
4. Left knee one inch off floor.

X. SPECIAL EXERCISES

As stated in the beginning of the chapter the desirable exercises have been classified according to their effects. These have been named according to the region involved, the movement performed or both (*i.e.*, arm exercise, stepping exercise and trunk lowering exercise, etc.). There are, however, a great number of excellent exercises so general in nature and so variable in type that it is impossible to classify them in any of the specific groups. These exer-

cises have been gathered in one group and called special exercises.

The reader's first thought is, perhaps, that these exercises should be named general rather than special. While it is true that the exercises are quite general in nature, in shaping-up a drill for a class we select an exercise according to the specific or special needs of the particular group at hand. We would select an hygienic exercise such as the "Down and Up" or the "Squatter" for a class of adults; a postural exercise, such as the "Chest Lifter" or "Side Stretcher," for Junior High School students; and an educational exercise such as the "Shot Putter" or "Broad Jumper" for Senior High School students. Hence the reason for naming this particular group special exercises.

From the very nature of these exercises, being heterogeneous rather than homogeneous, it is impossible to definitely enumerate specific values for the entire group. According to the exercise used, the values may be postural, hygienic, educational, developmental, or limbering, either singly or in combination.

The following are samples of good special exercises:

The Squatter.

Starting position. Standing erect.

1. Squat on floor (knees inside arms).
2. Knees normal (keep hands on floor).
3. Squat on floor (same as count 1).
4. Stand erect.

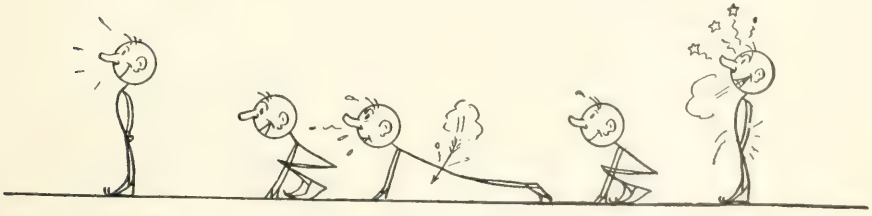


FIG. 123

The Down and Up. (Fig. 123.)

Starting position. Standing erect.

1. Squat on floor (knees inside arms).
2. Front support.
3. Squat on floor (knees inside arms).
4. Stand erect.

The Cross Over.

Starting position. Back on floor, hands sideward.

1. Hips turned right, left leg lifted across, touching left foot to right hand.
2. Hips and left foot normal.
3. Hips turned left, right leg lifted across, touching right foot to hand.
4. Hips and right foot normal.

The Holy Roller.

Starting position. Back on floor, feet upward, hands sideward.

1. Hips turned right, feet lowered sideward, right foot touching right hand.
2. Hips normal, feet upward.
3. Hips turned left, feet lowered sideward, left foot touching left hand.
4. Hips normal, feet upward.

The Touch Back.

Starting position. Back on floor, hands under buttocks.

1. Feet upward and backward, body curled upward until feet touch floor behind the head.
2. Feet and body normal.

The Figure Eight.

Starting position. Back on floor, feet half upward, hands under buttocks.

1. Holding feet together, drop feet downward, circle them to the right, describing a circle about thirty inches in diameter until they return to the starting position.
2. Holding feet together, drop feet downward, circle them to the left, describing a circle about thirty inches in diameter until they return to the starting position.

The Bike Rider. (Fig. 124.)

Starting position. Back on floor, hips elevated, elbows placed on floor and hands under hips, legs vertical.

1. Left knee at chest.
2. Left knee normal, right knee at chest.

FIG. 124

The Monoplane.

Starting position. Chest on floor, hands sideward (on floor).

1. Hands upward, feet upward.
2. Hands on floor, feet normal.

FIG. 125

The Ground Hog. (Fig. 125.)

Starting position. Chest on floor, hands sideward (on floor).

1. Hands upward.
2. Hands over head.
3. Hands sideward.
4. Hands on floor.

The Camel Hump.

Starting position. Front support.

1. Hips upward.
2. Hips normal.
3. Hips downward.
4. Hips normal.

Flexible Flora.

Starting position. Front support.

1. Hips downward.
2. Hips upward.

The Elbow Cracker.

Starting position. Front support.

1. Front elbow support.

Sampson's Special.

Starting position. Front elbow support.

1. Front support.
2. Hands apart (secured by a jumping movement).
3. Hands normal (secured by a jumping movement).
4. Front elbow support.

The Triceps Special.

Starting position. Front support.

1. Front elbow support.
2. Front support.
3. Low front support.
4. Front support.

Daddy-Long Legs.

Starting position. Front support.

1. Right foot upward, left hand upward.
2. Right foot normal, left hand normal.
3. Left foot upward, right hand upward.
4. Left foot normal, right hand normal.

The Donkey Engine.

Starting position. Front support.

1. Low front support, right foot upward.
2. Front support, right foot normal.
3. Low front support, left foot upward.
4. Front support, left foot normal.

The Spreader.

Starting position. Front support, hands together on floor.

1–4. Using a jumping movement gradually jump the hands apart. On the fourth count they should be as far apart as possible.

5–8. Using a jumping movement gradually jump the hands together. On the eighth count they should be together.

The Hand Walker.

Starting position. Squat on floor, knees apart.

1–8. Walk forward eight steps with hands until body is

well stretched out. (Reach forward and slap floor hard on eighth count).

9–16. Walk hands back to starting position, using eight steps. (Slap floor hard on the sixteenth count.)

The Extender.

Starting position. Squat on floor, knees together.

1. Right foot backward (on floor).
2. Hands upward. (Straighten back in line with extended leg.)
3. Hands normal.
4. Right foot normal.

5–8. Same with left foot.

The Back Tracker.

Starting position. Squat on floor, knees together.

1. Right foot backward (on floor).
2. Left foot backward. (Front support.)
3. Right foot between hands.
4. Left foot between hands. (Squat on floor).

The Squat Jumper.

Starting position. Squat on floor, knees together.

1. Feet backward. (Front support.)
2. Feet between hands. (Squat on floor, knees together.)

The Hand Bounder.

Starting position. Front support, right hand 6 inches forward, left hand 6 inches backward.

1. Left hand 6 inches forward, right hand 6 inches backward (secured by a jumping movement).
2. Right hand 6 inches forward, left hand 6 inches backward (secured by a jumping movement).

The Starter.

Starting position. Front support, right foot between the hands.

1. Right foot normal, left foot between the hands. (Secured by a jumping movement.)

2. Left foot normal, right foot between the hands. (Secured by a jumping movement.)

The Charge and Swing.

Starting position. Standing erect.

1. Right foot charged sideward, hands upward.
2. Trunk bent forward, hands backward between legs.
3. Trunk normal, hands upward.
4. Right foot normal, hands normal.

5–8. Same to left.

The Lunge Support.

1. Right foot lunged sideward, right hand on floor.
2. Right side support.
3. Right foot placed beside right hand.
4. Right foot and trunk normal.

5–8. Same to left.

The Weeping Willow.

Starting position. Standing erect, hands on neck.

1. Trunk bent forward, elbows forward touching knees.
2. Trunk bent backward, elbows sideward.

The Roll Around.

Starting position. Standing erect, feet apart, hands on hips.

1. Trunk bent forward.
2. Trunk bent right.
3. Trunk bent backward.
4. Trunk bent left.

The Complete Bend.

Starting position. Standing erect, feet apart, hands on hips.

1. Trunk bent forward.
2. Trunk normal.
3. Trunk bent backward.
4. Trunk normal.
5. Trunk bent right.
6. Trunk normal.
7. Trunk bent left.
8. Trunk normal.

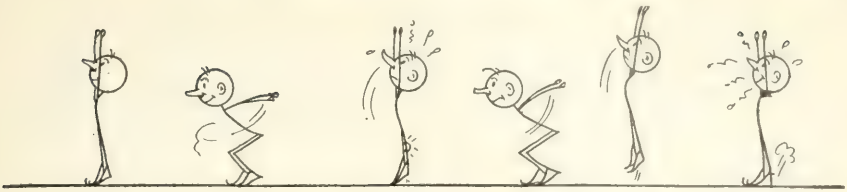


FIG. 126

The Jumper. (Fig. 126.)

Starting position. Standing erect, heels upward, hands upward.

1. Knees half bent, trunk half lowered, arms backward.
2. Knees normal, heels upward, hands upward.
3. Knees half bent, trunk half lowered, arms backward.
4. Swing arms upward and jump upward, landing with feet together.

The Bowler.

Starting position. Standing erect, facing half right, hands together forward.

1. Trunk half bent forward, right hand backward.
2. Trunk normal, hands together forward.
3. Trunk half bent forward, right hand swing backward, left foot lunged forward.
4. Right hand forward.

The Javelin Thrower.

Starting position. Standing erect, facing half right, feet stride left, right hand upward, left hand forward.

1. Trunk bent backward, right knee quarter bent.
2. Trunk inclined forward, right hand forward-upward, right knee normal.
3. Trunk bent backward, right knee quarter bent.
4. Trunk inclined forward, right knee normal, left knee half bent, right hand thrown forward.

The Pitcher.

Starting position. Feet stride right, hands together at chest.

1. Circle right arm in backward-forward plane.

2. Circle right arm in backward-forward plane.
3. Hands together at chest.
4. Lunge forward with left foot and throw right arm forward.

The Discus Thrower.

Starting position. Standing erect, feet stride left, hands together at chest.

1. Trunk turned right, right hand sideward-downward, knees quarter bent.
2. Trunk normal, hands together over left shoulder.
3. Trunk turned right, right hand sideward-downward, knees quarter bent.
4. Trunk turned left, right arm forward, left arm backward.

FIG. 127

Wood Chopper. (Fig. 127.)

Starting position. Standing erect, feet apart, hands clasped together over the right shoulder.

1. Trunk bent forward, hands between legs. (Downward movement should be vigorous.)
2. Trunk normal, hands over left shoulder.
3. Trunk bent forward, hands between legs. (Downward movement should be vigorous.)
4. Trunk normal, hands over right shoulder.

Shot Putter.

Starting position. Feet stride left, right hand at shoulder, left hand forward.

1. Trunk bent right, right knee bent slightly.
2. Trunk normal.
3. Trunk bent right, right knee bent slightly.

4. Thrust right arm forward vigorously, fling left arm backward, jump off both feet and execute a half turn, landing in the position of feet stride right.

5–8. Same with left side.

The Weight Thrower.

Starting position. Standing erect, feet apart, hands upward.

1. Knees half bent, trunk half bent forward, hands on floor between feet.
2. Knees normal, trunk normal, hands forward-upward.
3. Knees half bent, trunk half bent forward, hands on floor between feet.
4. Knees normal, trunk bent backward, hands upward. (This position is gained by a powerful upward and backward swing of the arms.)

The Hammer Thrower.

Starting position. Standing erect, feet apart, hands clasped together beside right hip.

1. Circumducting the trunk, swing the arms in a large circle about the head.
2. Same as 1.
3. Pivoting on the left foot, execute a half turn to the left; continue by pivoting on the right foot and executing a half turn left. (Hands together in front.)
4. Trunk inclined backward, hands thrown over left shoulder.

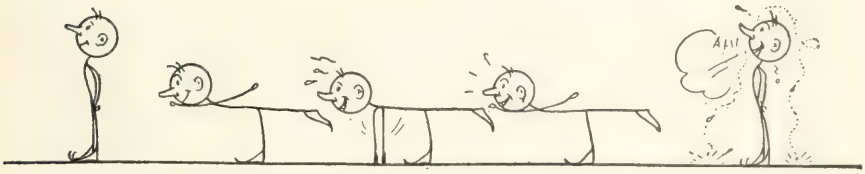


FIG. 128

The Balancer. (Fig. 128.)

Starting position. Standing erect.

1. Right foot raised backward, trunk lowered, hands sideward.

2. Trunk bent forward, hands touching floor.
3. Trunk lowered, hands sideward.
4. Right foot, trunk and hands normal.

The Flyer.

Starting position. Standing erect.

1. Right foot lunged forward, hands touching right toe (weight on right foot).
2. Right knee normal, left knee quarter bent, trunk bent backward, arms sideward (weight on left foot).
3. Left knee normal, right knee half bent, trunk bent forward, hands touching right toe (weight on right foot).
4. Right foot, trunk and hands normal.

The Fencer.

Starting position. Standing erect, facing left, feet stride right, right hand sideward (arm bent slightly), left arm curved back of head, both knees quarter bent.

1. Right hand thrust sideward, left arm sideward, left knee normal, trunk inclined in direction of thrust.
2. Same as starting position.
3. Right hand thrust forward, left arm sideward, right foot lunged forward.
4. Same as starting position.

XI. STEPPING EXERCISES

Stepping exercises consist of running in place, hopping in place, jumping in place, and elementary solo dancing steps. Working large groups of muscles, as these exercises do, particularly if arm movements and trunk swayings are combined with them, they have a powerful stimulating effect on the circulation and respiration. By exercising the muscles of the calves, thighs, and pelvic girdle in the peculiar way in which these exercises do, this work is also particularly significant in producing a nimbleness of foot which can be acquired in no other way except perhaps in straight dancing. Suppleness, strength and endurance of the legs are all developed by this sort of exercise. This work, too, more than any of the other types of exercise is especially interesting and enjoyable to the

exercisers. In summary, stepping exercises are particularly significant as means of getting a good hygienic reaction and developing muscular strength, muscular endurance, suppleness, and general agility in the legs.

Of a great number of stepping exercises the following are very good samples:

Running in place.

The feet are alternately lifted and placed, each foot being lifted before the other is placed. Cadence one hundred and eighty steps a minute. No progress is made.

The above exercise may be also done as follows:

a. Knees raised—knees raised as high as possible.
b. Feet forward—feet flung forward.
c. Feet sideward—feet flung sideward.
d. Feet backward—feet flung backward.
e. Running fast—cadence three hundred steps a minute.
f. Running slow—cadence one hundred and twenty steps a minute.
g. Cut feet forward—feet are cut across forward.
h. Cut feet backward—feet are cut across backward.

Hopping in place on right (left) foot.

The indicated foot is held on the floor; the other foot is lifted from the floor. Successive hops are executed on the indicated foot. No progress is made.

The above exercise may be also executed as follows:

a. Knee raised—knee of raised leg is held as high as possible.
b. Foot sideward—foot of raised leg is held sideward.
c. Foot forward—foot of raised leg is held forward.
d. Foot backward—foot of raised leg is held backward.

Hopping on both feet in place.

With the feet held together successive hops are made off both feet. The performer leaps off both feet simultaneously and lands on both feet simultaneously. The feet leave the floor two inches. No progress is made.

The above exercises may be also executed in the following manner:

a. Feet apart.
b. Feet stride right.
c. Feet stride left.
d. Right leg crossed in front of left.
e. Left leg crossed in front of right.

Jumping in place.

With the feet held together, successive jumps are made from the floor. The feet leave the floor ten inches. No progress is made.

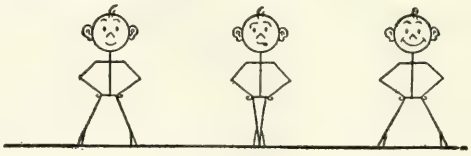


FIG. 129

Jumping feet apart and together. (Fig. 129.)

The feet are alternately jumped apart and together. No progress is made.

Jumping feet stride right (left) and together.

The feet are alternately jumped to the indicated stride position and the normal position. No progress is made.

FIG. 130

Alternate stride jumping. (Fig. 130.)

The feet are alternately jumped to the left and right stride positions. No progress is made.

Jumping feet cross leg right (left) and together.

The feet are alternately jumped to the indicated cross-leg position and the normal position. No progress is made.

Alternate cross leg jumping.

The feet are alternately jumped to the left and right cross-leg positions. No progress is made.

Toe Touching Forward.

Starting position. Standing erect.

1. Jump from both feet, land on right foot, toe of left foot touching floor forward.
2. Jump to position of feet normal.
3. Jump from both feet, land on left foot, toe of right foot touching floor sideward.
4. Jump to position of feet normal.

NOTE: The above step may be also done sideward and backward.

Skip Step in Place.

Starting position. Standing erect.

1. Step on the right foot, raise the left foot to a position beside the calf of the supporting leg.
2. Hop on the right foot.
3. Step on the left foot, raise the right foot to a position beside the calf of the supporting leg.
4. Hop on the left foot.

The Splitter.

Starting position. Standing erect.

1. Jump feet 12 inches apart.
2. Jump feet 24 inches apart.
3. Jump feet 36 inches apart.
4. Jump feet together.

The Eight Count Split.

Starting position. Standing erect.

1. Jump feet 12 inches apart.
2. Jump feet 24 inches apart.
3. Jump feet 36 inches apart.
4. Jump feet 48 inches apart.
5. Jump feet 36 inches apart.
6. Jump feet 24 inches apart.
7. Jump feet 12 inches apart.
8. Jump feet together.

The Alternate Split.

Starting position. Standing erect.

1. Jump feet apart.
2. Jump feet together.
3. Jump feet wide apart.
4. Jump feet together.

The Alternate Stride Jumper.

Starting position. Standing erect.

1. Jump feet stride right.
2. Jump feet normal.
3. Jump feet stride left.
4. Jump feet normal.

The Indian Dance.

Starting position. Standing erect.

1. Step on the right foot, raise the left foot to a position beside the calf of the supporting leg—and make a quick hop in this position.
2. Step on the left foot, raise the right foot to a position beside the calf of the supporting leg—and make a quick hop in this position.

Cut Step Sideward.

Starting position. Standing erect.

1. Step on the right foot, swing the left foot sideward.
2. Hop on the right foot (hold left foot sideward).
3. Cut the left foot to floor, swing right foot sideward.
4. Hop on the left foot (hold right foot sideward).

NOTE: The above exercise may also be executed forward, backward, left forward and right backward, and right forward and left backward.

The Pep Stepper.

Starting position. Standing erect.

Eight hops on right foot.
Eight hops on left foot.
Four hops on right foot.
Four hops on left foot.

Two hops on right foot.
Two hops on left foot.
Four running steps in place.

XII. BREATHING EXERCISES

Breathing exercises are nothing more than forced respirations —forced inspiration followed by forced expiration—the act of which is usually combined with simple movement of the arms or trunk. Skarstrom sums up the effect of breathing exercises as follows:

"By the alternating contractions and relaxation of large muscular masses and the alternating flexion and extension in the joints involved in rhythmic leg and arm movements (when these combinations are used) the valvular mechanism in the veins of the extremities is made to do full duty, thereby reducing the peripheral resistance to be overcome by the heart. Similarly, the deep-measured breathing causes a more powerful aspiration—literally a suction exerted on the great veins of the chest—than shallow rapid breathing. All these factors aid the venous and lymphatic flow, supply the means for a greater output at systole, and so, materially ease, or at least steady, the heart's action. Blood-pressure falls more gradually and evenly, and without the preliminary rise which probably always occurs when violent exercise suddenly ceases.

"While breathing exercises do not cause more oxygen to be taken up by the blood passing through the lungs, as is popularly supposed (the arterial blood at all times being practically saturated with oxygen) they are valuable for many other reasons. Besides aiding circulation they cultivate mobility of the chest; cause a free flow of blood and lymph in the remote and less completely used portions of the lungs and so favor the nutrition of these parts; they lead to a strengthening of the thoraci spine, and a strengthening of the muscles of inspiration; by the more complete descent of the diaphragm and the greater variations in intra-abdominal pressure they influence favorably the functions of the liver and other abdominal organs. They also give opportunity for training the whole breathing mechanism to efficient and economical action.

"The arm movements, while not increasing the total capacity of

the chest, undoubtedly lead to a maximum expansion of the upper chest and encourage lateral costal breathing. In all these respects breathing exercises are most effective at a time when the body, as a result of vigorous exercise, demands plenty of air and the respiratory centers are extremely active."

Miss Lippitt, in her book, "Corrective Gymnastics," summarizes the effects of breathing exercises quite comprehensively as follows:

"1. Strengthening the muscles of respiration, particularly the diaphragm.
2. Increasing the mobility of the lungs and chest.
3. Securing equal development of all parts of the chest.
4. Enlarging the chest capacity and the breathing capacity of the lungs.
5. Deepening habitual breathing.
6. Improving circulation.
7. Helping increase the flow of blood through the inferior vena cava.
8. Lowering the blood pressure and quieting the heart after violent exercise.
9. Causing a freer flow of blood and lymph to those distant parts of the lungs not habitually used.
10. Relieving congestion in the organs of the pelvic region.
11. Quieting the nerves."

Added to these, breathing exercises have a very decided postural effect. When engaged in the act of making forced inspirations the average individual naturally lifts the chest, forces the head and shoulders back, draws the abdomen up and straightens the spine. All this tends to improve posture in the upper part of the body.

A few of the most common breathing exercises are as follows:

The Expander.

Starting position. Standing erect.

1. Hands turned outward and inhale.
2. Hands normal and exhale.

The Side Expander.

Starting position. Standing erect.

1. Hands sideward and inhale.
2. Hands normal and exhale.

The Upward Expander.

Starting position. Standing erect.

1. Hands upward and inhale.
2. Hands normal and exhale.

The Bellows.

Starting position. Standing erect.

1. Hands upward and inhale.
2. Trunk bent forward, hands touching floor and exhale.

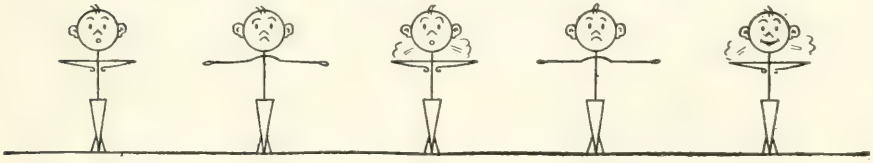


FIG. 131

The T. B. Special. (Fig. 131.)

Starting position. Standing erect, hands at chest.

1. Hands sideward and inhale.
2. Hands at chest and exhale.

The Lung Pumper.

Starting position. Standing erect.

1. Hands at chest and inhale.
2. Hands normal and exhale.

West Point Breathing.

Starting position. Standing erect.

1. Hands sideward-downward and inhale.
2. Hands normal and exhale.

The Balloon.

Starting position. Standing erect, hands on hips.

1. Head pressed backward and inhale.
2. Head bent forward and exhale.

CHAPTER VIII

REVIEW OF THE LESSON PLAN

To avoid any misunderstanding and possibly clear up a few unsettled points about the lesson plan it seems advisable to review a few of its main features. Why have certain common types of exercises been left out? How does the plan shape up as regards the principles of totality and unity? How is the lesson plan used? These questions will be answered in the following pages.

While a review of the lesson plan shows that all the important regions of the body have been reached, the student of physical education will notice that a few types of exercises in very common usage have not been included. Order exercises, trunk backward-bending exercises and balance exercises are not to be found. Why have these been excluded?

I. ORDER EXERCISES

The thesis behind the use of order exercises is based on two considerations, one psychological and the other physiological. In the first instance, the argument starts with the premise that previous to starting the drills the exercisers have been running about the exercising area, playing tag, skipping rope, jumping, shooting baskets, etc., doing anything and everything their minds can invent. Hence, when the group is put into formation for class work their mental attitude is not conducive to serious class work. Order exercises are used to induce the proper mental condition. In the second instance, the argument is based on the premise that the group has just come from the classroom, is stiff in the joints and needs a little general limbering up before starting the more severe work of the drill proper. Order exercises are used for this purpose.

There is no question but what in certain specific cases there is considerable truth in both of these statements. If conditions were more favorable than they are at present, it might be wise to include order exercises in our lesson plan, but in view of the fact that our time is so limited, and nearly as good results can be secured through

proper leadership, they have been excluded. Through developing a good state of class morale the class can be trained to assume the proper frame of mind as soon as they are told to "fall in." Done properly, the preliminary procedures of taking roll, counting off, and opening order, contribute considerably to producing the desired condition. If the class has been playing about the exercising area the blood is flowing freely and there is no special need for preliminary exercises to warm up the body. If the class has not had this opportunity to "warm up," the order exercises may be dispensed with on the ground that the arm exercises partially serve this purpose and are not violent enough to do any harm.

In certain situations, determined best by the local teacher, order exercises may be used. When they are used, to get the proper psychological effect, they should be introduced and carried on by the response method. There are five distinct sorts of order exercises. These are as follows:

1. Calisthenic exercises executed to command.
2. Facings. (Left face, Right face, About face, etc., in close or open formation.)
3. Steppings. (2 steps forward, 3 steps backward, etc., in close or open formation.)
4. Marching. (Forward, Backward, To the rear, etc., in close or open formation.)
5. Quickening exercises. (Game-like exercises done in response, in close or open formation.)

The instructor may confine the order exercises for any given lesson to one or two of these types, or if he chooses three or four may be used, but in any case he should bear in mind that this work is only preliminary to the lesson proper and as little time as possible should be devoted to it. Ten or twelve separate orders should be the very maximum in any case and six or eight should suffice in most instances. If the best results are to be gained, the orders should be mixed as much as possible, and precise, instantaneous response should be demanded.

While order exercises are usually used at the beginning of a lesson, if conditions warrant it, and not infrequently they do, they may be introduced at any other point in the lesson. Any time that

interest and attention wavers the instructor may use this means of reëstablishing it. Like all other attention-inducing crutches, though, it should not be overdone. A pleasant and effective procedure for doing this consists of marching the class back and forth two or three times in open formation. The rhythmical execution of the commands, "Forward—march," "To the rear—march," "To the rear—march," and "Class halt," is exceedingly effective in securing results.

II. BACKWARD-BENDING EXERCISES

Backward-bending exercises are used considerably, but a study of the conditions under which they are taught reveals the fact that for the most part they are introduced by untrained or negligent teachers. Those who are acquainted with kinesiology (body mechanics) realize the harmful nature of this type of exercise and consequently avoid its usage, at least its over-usage. The bending in a trunk backward-bending exercise takes place, largely, in the small of the back, thus tending to accentuate the lumbar curve, which, in the great majority of cases, is already in an exaggerated state. The Swedes use span bendings and dorsal exercises, both of which are backward bendings, in their day's order, but in both instances it is specifically pointed out that the bending should be localized in the dorsal curve. In the lesson plan presented here, neck and chest exercises have been introduced in place of these exercises; properly executed, they produce a similar result.

Still, trunk backward-bending produces other effects that are undisputably good. The exercise has a splendid stimulating effect on the spinal cord and spinal ganglia in the lumbar region. The abdominal muscles, especially the rectus-abdominus, are considerably exercised and developed by it. The exercise is quite strenuous and consequently the hygienic reaction is large. And of course it makes for general suppleness in the lower back. The only bad feature of the exercise is that it is severely anti-postural. Therefore, while it seems unwise to assign trunk backward-bending a definite place in the lesson plan, exercises of this type, because of their unquestioned benefits and in spite of their anti-postural effects, may be used occasionally as the instructor sees fit. The proper place to use a trunk backward-bending exercise is as a special exercise,

Introduced here, it will not be used with sufficient frequency to cause any harm.

III. BALANCING EXERCISES

Balance exercises occupy an important niche in a number of schemes of physical training; the Swedish system, the French system, the German system, and a number of individual systems give this type of work a prominent place. A study of the exercises used shows that for the most part they consist of maintaining the balance on one or both feet while standing or walking in prescribed manners. Without apparatus, which is one of the marking conditions in calisthenics, the only possible, worthwhile balance exercises are sustained leg raising exercises.

Those who advocate the use of balance exercises claim that they develop the balance sense, develop and train good posture, and develop the abdominal muscles. The writer agrees that these exercises develop the balance sense, but he doubts if they do this to any considerable degree; and, further, if they did, he questions the value and significance of this training, particularly as it must be, and is, carried on in calisthenics. In balance exercises (sustained leg raising exercises) the head, trunk, and arms are held for comparatively long periods of time in good forced postural positions, so the statement that balance exercises favorably influence posture must be accepted. And on the last score, sustained raising of one of the legs unquestionably exercises and develops the abdominal muscles.

This is all well and good, but after all an analysis of the exercises as carried on in calisthenics shows that they are nothing more nor less than leg raising exercises carried on by a response method. In view of this fact, balance exercises, as such, have not been included in the lesson plan though there is no reason why exercises of this type should not be used. At the instructor's discretion an exercise of this type may be carried on either at the leg raising stage of progress or as a special exercise.

IV. BREATHING EXERCISES

Although they have several other notable effects, breathing exercises, because of their restorative effect, are placed as the final activity in the day's order. But if a condition of breathlessness

exists at any other time in the lesson, there are no particular reasons against and several reasons for the introduction of a breathing exercise at such times. An exercise can neither be learned correctly nor performed correctly when laboring under the handicap of breathlessness. Work carried on under these conditions is usually a total loss. Generally it is better either to rest the class or give them a breathing exercise until the condition has been alleviated, or at least partially reduced. If the class is fatigued in addition to being out of breath a short period of rest is perhaps the best. On the other hand, if it is a case of pure breathlessness a breathing exercise is very useful. It aids considerably in restoring normal respiration. Breathlessness, too, has a tendency to lower class morale; breathing exercises introduced at such times tend to restore it.

In certain quarters of the physical education world, breathing exercises are challenged on the ground that they do not facilitate the respiratory processes and thus should not be used. While, in the light of present day physiological research, it seems to be true that forced respiration does not facilitate the respiratory process—increasing the oxygen supply in the blood and releasing the waste content—this fact alone should not cause breathing exercises to be dropped from our lesson plan. Quite to the contrary there are a number of good reasons why it should be included.

During normal breathing only a limited area of the lungs is activated and washed; in forced breathing the remote areas receive these benefits. If there is anything to the thesis that function makes structure and disuse makes decay, then forced breathing must be accepted as a means of developing the lungs. In addition, breathing exercises vigorously activate and stimulate the vital organs. This exercise, perhaps more than any other, churns and stirs up and massages the vital organs. The diaphragm is vigorously exercised and developed. And still further, breathing exercises afford excellent posture training. Properly executed the chest wall is expanded and lifted, the abdominal organs are lifted, the shoulders are forced back off the chest, the head is pressed back and in other ways these exercises develop good mechanical conditions of the body. Add to these the fact that forced breathing is accompanied by a feeling of relief and elation and there are sufficient reasons for including breathing exercises in our lesson plan.

V. SECONDARY AND INCIDENTAL EFFECTS

To get a clearer and more precise comprehension of the lesson plan it seems advisable to point out that while it is true that each type of exercise is known according to its major or principal effect, each has secondary or incidental effects. The complex nature of the muscle and joint mechanism accounts for this. The scope and the variety of these, of course, depends on the exercise. All trunk exercises, for instance, lowering, bending and turning alike, call the muscles of the legs into operation. Most abdominal exercises activate many other muscle groups ranging from the hands to the feet. Most arm exercises powerfully effect the upper back and chest, not to mention the lower back and pelvic region. And so it may be continued; no exercise is purely local in its nature. Inasmuch as these secondary or incidental effects vary with the exercises it is out of the question to further classify them according to these secondary considerations. In shaping up a lesson, though, this fact should be borne in mind.

VI. EXERCISES MAY BE SUPPLEMENTED

When devising a calisthenic drill according to this lesson plan it is neither necessary nor advisable to have each exercise confined to the specific part mentioned as the exercise type. With beginners it is usually best to cling pretty closely to the unmixed exercise type, but as ability and skill improves a number of the exercises may, and should have other types joined with them; this not only makes the work more interesting but in many cases increases the effectiveness of the exercise in use. Arm exercises may have foot placings joined with them; trunk exercises may have foot placings, chargings, and arm placings joined with them; leg exercises may have trunk bendings and lowerings joined with them; and other exercises may have similar embellishments.

Double or triple assemblages of this sort may be intersected or combined. In the first instance the movements involved in executing the exercise are done separately; in the second case, they are done simultaneously. The intersected variety is a trifle simpler to execute but with a little training either may be used quite effectively. Examples of the two types are as follows:

1. Intersected type
   1. Right foot sideward.
   2. Hands upward.
   3. Hands normal.
   4. Right foot normal.

2. Combined type.
   1. Right foot sideward, hands on shoulders.
   2. Heels upward, hands upward.
   3. Heels normal, hands on shoulders.
   4. Right foot normal, hands normal.

When supplementary exercises of this sort are used it does not follow that the supplementary exercise type should be cut out of its regular place in the drill. Quite the contrary is true. When the reader recalls that supplementary exercise types are built on to the regular exercise types to complement them or increase their effectiveness, the error of this position will be seen. The legs may be used to supplement a trunk sideward-bending exercise, yet the leg exercise should occupy its regular place in the lesson. In every case the full drill of eight, ten, or twelve exercises should be used.

When using supplementary exercises of this sort any given exercise type may be used two or three times and in the case of the arms five or six times in one drill, but when this occurs the instructor should endeavor to make them as varied as possible. The arms, for instance, may be used sideward in one exercise, on the neck in another, on the shoulders in another and so on. With reference to this supplementary work with the arms, however, care should be exercised to not overwork them; "not oftener than every other exercise" is a good criterion to follow.

VII. LESSON PLAN AND ORIGINAL OBJECTIVES

How well does the lesson plan achieve our original objectives, namely: the development of organic reaction, posture, suppleness and body control? The following table depicting the main effects of the various exercises illustrates this in a rough manner:

Hygienic	Postural	Suppleness	Control
Trunk turning	Arm	All	All
Leg raising	Neck and Chest		
Trunk sideward-bending	Trunk lowering		
Trunk forward-bending	Abdominal		
Heavy Leg	Breathing		
Trunk lowering			
Abdominal			
Stepping			

Eight exercise types are distinctly hygienic in character and the others are, directly or indirectly, partially contributive to this result. Five exercises are distinctly postural and the others, if executed properly, may make large contributions in this direction. All produce suppleness and muscle control. The effect of the special exercise in each case, of course, depends on the nature of the exercise used.

VIII. LESSON PLAN AND TOTALITY

Does the lesson plan reach all of the fundamental muscle groups? This can be most effectively outlined by the following table:

1. Arm	Arms, shoulders, upper back, chest
2. Trunk turning	Waist, pelvis
3. Leg raising	Thighs, pelvis, abdomen
4. Trunk sideward-bending	Sides of trunk
5. Neck and chest	Neck, chest, upper back
6. Trunk forward-bending	Legs, buttocks, lower back, upper back
7. Heavy leg	Pelvis, thighs, calves
8. Trunk lowering	Lower back, upper back
9. Abdominal	Abdomen, pelvis
10. Special	Any region
11. Stepping	Calves, thighs, pelvis
12. Breathing	Chest

The above table, of course, is not complete, but it shows the principal regions affected by the various types of exercises. The

particular exercise selected for use at each point in the drill will alter the table slightly but, in general, it is fairly accurate. All of the important muscle groups and all of the main joints from hand to foot are vigorously exercised.

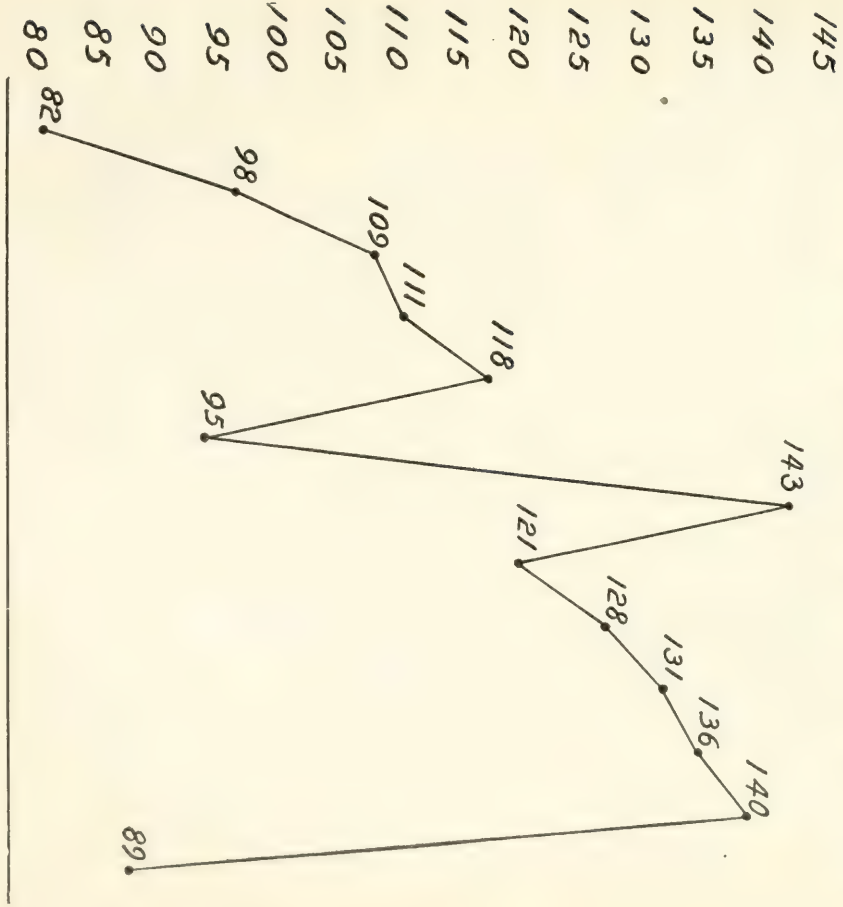
From the standpoint of exercising for general organic results the main sections of the body are relatively significant in descending order, as follows: trunk, legs, arms, and neck. Of these the trunk is by far the most important; the neck being perhaps the least important. An examination of our lesson plan shows that this practical principle has been well carried out. The following chart showing the four sections, with the exercises used in each section, discloses this clearly:

Trunk	Legs	Arms	Neck
Trunk turning	Leg raising	Arm	
Trunk sideward-bending	Heavy Leg		Neck
Trunk forward-bending	Stepping		
Trunk lowering			
Abdominal			
Breathing			

These are, thus, six trunk exercises, three leg exercises, one arm exercise and one neck exercise; half the exercises have to do with the trunk, one-quarter have to do with the legs, and there is but a solitary exercise for each the arms and the neck. The special exercise, depending on the particular exercise selected, will add one more to one of these groups, in all probability the trunk or legs. If a chest exercise is used in place of a neck exercise, we will have one more added to the trunk group.

IX. LESSON PLAN AND UNITY

How does our lesson plan meet the principle of unity? To test out the relative amount of vigor required in the performance of the various families of exercise the writer carried on an experiment with some students taking the course in athletic coaching at the University of Illinois. Ten students each performed drills made up of twelve exercises representing the twelve exercise types. The same exercise was not used twice. Each exercise was of four counts duration, executed in the performer's natural rhythm, in



Normal
After Arm Exer.
After Trunk Turn Exer.
After Leg Rais. Exer
After Trunk Swd. Bend Exer.
After Neck or Chest Exer.
After Trunk Fwd. Bend Exer.
After Heavy Leg Exer.
After Trunk Lower Exer.
After Abdom. Exer.
After Special Exer.
After Stepping Exer.
After Breathing Exer.

good form, and repeated fifteen times. The standing pulse rate was taken before the work was started and then taken again immediately after each exercise. In order to allow the pulse to return to normal after each exercise three minutes was allowed to elapse between exercises. The results obtained thus can be accepted as a fairly representative indication of the relative amount of work done in the various types of exercises. The averages for each of the thirteen pulse readings is shown on the accompanying graph.

Examining the graph we discover that the arm exercise, which is the first in our plan, is only slightly vigorous and thus serves to start the warming-up and limbering-up process. The trunk turning exercise develops this further. The leg raising exercise is about as vigorous as the trunk turning exercise, so our process of organic and circulatory stimulation stays at about the same level. With the trunk sideward-bending exercise it is again increased. The neck and chest exercise is not very vigorous, so there is a considerable dropping back. Then, curiously, we find our next exercise, trunk forward-bending, producing the highest reaction of all the exercises. The heavy leg exercise, apparently not so vigorous, causes the curve to fall considerably. During the four exercises which follow—trunk lowering, abdominal, general and stepping—the organic reaction gradually increases until the apex is reached in the stepping exercise. The breathing exercise, the twelfth and last, is relatively relaxational, so there is a considerable dropping off here.

An inspection of the graph shows that the only breaks in the curve of intensity of work are those accompanying the neck or chest exercise and the trunk forward-bending exercise. After the heart rate has reached 118 in the trunk sideward bending exercise it drops 23 beats in the performance of the neck or chest exercise, then leaps up 48 beats in the trunk forward-bending exercise, and then drops back 22 beats in the following heavy leg exercise. This is not so objectionable, however, as it might first appear. In the first place being less vigorous, as it is, the neck and chest exercise provides a very satisfactory rest in the middle of the drill. If the trunk forward-bending exercise is so vigorous as it appears to be, it can quite logically follow the neck and chest exercise. The maximum pulse rate reached by this exercise will be less when performed here than after any of the more vigorous exercises. The drop

which occurs after the performance of the trunk forward-bending exercise is, perhaps, a desirable "let down."

To avoid overwork of any particular muscle group or groups, the exercising region should be shifted with each exercise. How well has this been accomplished in the lesson plan? A study of the chart on a previous page will show this in detail, but briefly it is as follows:

1. Shoulders
2. Waist
3. Pelvic region
4. Sides of trunk
5. Neck and chest
6. Lower back
7. Legs
8. Back
9. Abdomen
10. Anywhere
11. Legs
12. Chest

CHAPTER IX

PROGRAMS FOR NORMAL GROUPS

In the chapter in which the significance of the calisthenic drill is discussed, it is pointed out that free-exercising offers possibilities of benefit in several distinct ways; it produces good organic reactions, it is effective in improving and maintaining posture, suppleness and so on. Now, while in some measure there is need for effecting all of these results throughout life, the various stages of physical development and social life alter the needs of the individual, so that at different periods the several aspects are variously significant. Our lesson, therefore, must be altered, insofar as it can be, according to the significance of the different aspects at the several fundamental periods or stages of life. To do this involves adaptations in the number of exercises used, adaptations in the method of conduct, adaptations in the length of time for carrying on an exercise and, consequently, adaptations in the amount of time allowed for the drill.

It should be pointed out, too, that the condition of the exercisers, their stage of training and their standard of ability also influence the construction of the day's program. These factors are so variable and combine in so many different ways that it is wholly impossible to definitely establish here how each identical situation should be handled. All that can be attempted is to point out the principal factors which should be considered in drawing up the day's program for average natural groups which, quite obviously, are those established by our educational and social organizations.

I. NORMAL GROUPS

In surveying the field in which this work is and should be carried on we find certain distinct age groups and classes. These, of course, are slightly inconstant but in general they are followed by both educational and social institutions. These groups and classes are outlined in the following table (Table I):

TABLE I

	Edu. Inst.	*Social Inst.*
(6-8 yrs.)	Lower grades	Children
(9-11 yrs.)	Intermediate grades	Children
(12-14 yrs.)	Junior high school	Juniors
(15-17 yrs.)	Senior high school	Intermediates
		Employed Boys
		Employed Girls
(18-25 yrs.)	College	Seniors
	Military, Naval and Aviation Units	Young Men
		Young Women
(26-45 yrs.)		Middle Aged Men
		Business Men
		Professional Men
(46 yrs. on)		Older Men

(a) Sex Differences

The above age groups have been adopted for use in the present chapter. Since it is the common practice in both educational and social institutions, and quite properly, to unite boys and girls in the same classes until the eleventh or twelfth year has been reached, the program for these units has been outlined on this basis. After this time, though, it is the practice, and again quite properly, to separate the two sexes. Scientific investigation and practical experience both indicate, however, that with the exception of a difference in the number of times each exercise should be repeated, and the exclusion of a few of the more vigorous exercises, the same lesson plan can be used for both groups. In view of this fact, only one lesson plan is outlined for each age-group, this is for boys and men. The only alteration necessary in adapting these lessons for use with the other sex is to reduce, slightly, the number of times each exercise is repeated. (In a few instances new exercises will have to be substituted.)

(b) Calisthenics in Educational and Social Institutions

In view of the fact that a considerable number of the members attending classes in social institutions are also taking school work, the question arises, should the calisthenic work in both institutions be the same. The answer is decidedly yes. The average individual's needs are so great and the school's program so limited that

perfection is not secured by this course alone; the present-day school program would have to be considerably expanded to secure this. Therefore, by repeating the work of the educational institutions social institutions increase the amount of good returns.

(c) Upper Grades Same as Junior High School

In many instances the school system does not include the Junior High School in its plan of organization, but follows the traditional grade school and Senior High School plan. Where this occurs the lesson plan outlined for the Junior High School group should be used with the seventh and eighth grades.

II. AGES SIX TO EIGHT (LOWER GRADES)

Primary grade school pupils normally lead a very active play life which provides them with plenty of exercise, so there is comparatively little need of giving them calisthenic work for general hygienic purposes. In the same way they get (or should get) plenty of exercise for purposes of general suppleness, agility and motor training. At this age the bones and ligaments are quite pliable, and if conditions were different the body could be set up in good mechanical positions, but it so happens that with these groups postural work is quite ineffective. Children of six, seven and eight years of age are temperamentally irresponsible, and posture work is quite meaningless and tedious. Besides, at this age localized motor control, which is so essential to good postural training, is practically impossible. In view of these conditions it is folly to use exercises for postural purposes with this group.

(a) Exercise for Relief Purposes

Schoolroom confinement, however, is very irksome to normal children; both body and mind crave and demand activity. So, if we are not to make veritable prisoners of them we must provide them with some form of physical activity. The child of this age is so constituted, nervously and physically, that he actually requires exercise for its own sake. Since the child of this age is normally exceedingly active, it is best to provide him with work that is quite generous in nature and mentally and physically stimulating. This work should be, of course, educational; that is, the various neuromuscular coördinations should be trained and developed.

General play activities are best suited to this purpose and this type of work should constitute the bulk of the program. Pure calisthenics, experience reveals, is practically impossible, but occasionally a modified kind of calisthenics, variously called mimetics, story plays and imitation exercises, can and should be used.

(b) Story Play

The story play, which is perhaps the best type of this work, after all, is nothing more than calisthenics presented in the guise of play. The normal child takes great delight in imitating animals and machines, and making believe at carrying on the manual activities of mankind. The teacher takes advantage of this highly active imitative instinct and presents certain natural activities for imitation; in doing the imitations the child in reality executes calisthenic exercises. The teacher capitalizes a normal psychological situation in the interest of her work.

(c) Exercise Types Used

Since the work is carried on mainly for relief purposes—to give the children some general physical activity in response to a very urgent demand—there is no necessity for making this program long in time duration, nor all-comprehensive in the types of exercises used. Seven exercises covered in a period of from three to five minutes in length is ample in most cases.

The question arises, what exercise types should be used? Using our established lesson plan as a basis and recalling the generalities laid down in the previous discussion, it will be seen that we can immediately eliminate all so-called postural exercise types (neck and chest and trunk lowering), the abdominal exercise and the special exercise. Postural exercises are eliminated because they cannot be executed beneficially; the abdominal exercise is eliminated because the work is usually carried on in the classroom and the floor would get the children's clothes dirty; the special exercise is eliminated on the grounds that this particular group has no special need that can be satisfactorily met in this way. We are thus left with eight exercise types which are best organized into a permanent lesson plan of seven types—trunk turning and trunk sideward-bending being joined and used interchangeably.

(d) Lesson Plan

In shaping up story plays the teacher uses some theme, such as "Harvest Time," "Going to the Circus," "Soldiering," etc. She then selects several fundamental activities associated with each, and presents these activities to the children for imitation. To insure exercising all parts of the body in each story play these activities are best selected and arranged according to a predesigned lesson plan.

The following table gives the types of exercises to be used, the number of times each exercise should be repeated, the length of time that should normally be devoted to the performance of each exercise and the method for executing each (Table II):

TABLE II

Exercise	*Repeated*	*Working Time*	*Method of Performance*
1 Arm	4-6 times	10-20 sec.	At Will
2 Leg-raising	4-6 times	10-20 sec.	At Will
3 Trunk turning or sideward-bending	4-6 times	10-20 sec.	At Will
4 Heavy Leg	4-6 times	10-20 sec.	At Will
5 Trunk forward-bending	4-6 times	10-20 sec.	At Will
6 Stepping	20-30 times	10-20 sec.	At Will
7 Breathing	4-6 times	10-20 sec.	At Will

The above chart, of course, is only approximate in its figures. It is presented here to give the beginning instructor a slight indication as to the approved procedure. Certain exercises which are not over-strenuous nor over-difficult may be repeated more often. Four-position exercises require twice as much time as two-position exercises. In other ways, too, the actual lesson will vary from this table.

(e) Length of Period

In the average lesson the class should work at the exercises from one and one-half to three minutes. Allowing from one-half minute to two minutes for getting ready, introducing exercises, resting and returning to seats, the entire time consumed should range between three and five minutes. With beginners it may be a trifle more.

(f) Method of Teaching

In conducting this work the teacher can make it far more effective by calling into play to the greatest possible extent the children's imaginative instincts. The teacher usually suggests the play to be enacted, but the children can suggest the way in which the various movements should be carried out. In this the teacher asks for one or two children to demonstrate a movement and if it approximates the general activity wanted it should be accepted. In doing the exercise thereafter each pupil should be allowed a reasonable degree of latitude from the set form. While order is necessary there is no objection to allowing individual initiative; in fact, it should be encouraged. In view of the fact that it is practically impossible for children of this age to exercise accurately and precisely (positing the principle that such work is beneficial at this age, which is doubtful), it is futile to attempt to get precision. If the child's performance can be considered as approaching correct execution his work should be accepted as satisfactory. For a number of reasons, readily obvious from the above discussion, the at will method may be satisfactorily used with this group.

(g) Sample of Teaching Procedure

The following outline suggests the general procedure to be followed in the conduct of this work. The teacher, standing before the class, says: "Let's clean house," and then: "Who can show us how to clean the walls?" Several children volunteer. She selects one or two to give demonstrations. If these are not satisfactory she selects others until a satisfactory demonstration is given or she may give it herself. Then she instructs the class: "Now let's all clean the walls." Upon which all start the exercise. The children do not work in unison; each works independently to his or her own time as suits his or her fancy. After they have repeated the exercise from four to six times the teacher says: "The walls are clean," upon which all stop. She then says: "Now it's time to mop the floor," demonstrates the movements, and then: "Let's all mop hard," and all execute the exercise. In this way the class is carried through the seven activities involved in cleaning house.

III. AGES NINE TO ELEVEN (INTERMEDIATE GRADES)

In the intermediate grades conditions are altered considerably. The confining nature of school life is beginning to show its effects and the boy or girl has graduated from the childish stage of life. Children of this age are disposed to play considerably before and after school hours and if conditions were favorable—plenty of play space, etc.—there would be no necessity for having an expensive program of education in physical activities for this group for hygienic purposes in our schools. But in most cases conditions are not very favorable and we must begin to foster physical activity for hygienic reasons. The need for exercise for relief purposes still exists, but we must also begin to consider the hygienic aspect.

On top of this we are finding that, owing to the cramping, over-civilized conditions of modern life, the old games and pastimes, so popular a generation ago and so essential to normal healthy growth, have practically disappeared, and if we are to have these splendid growth-inducing activities carried on we must teach them in the schools. Then, too, three years of life in school seats combined with a lessened amount of general physical activity in an abnormal environment—modern civilization—has begun to make its impression on the body set-up and habits of the individual. For these reasons a fairly broad program of education in physical activities should be conducted with these groups.

(a) General Program

To meet the needs of this group we should teach dancing, simple games, marching and calisthenics. Through calisthenics, which is our main interest here, we can provide a large amount of training that cannot be secured in other ways. Desirable hygienic results can be secured through dancing and games, but good posture and motor control of a particular sort are best taught through calisthenics.

(b) Calisthenics May Be Used

By this time children are developed enough to absorb and respond to a limited amount of posture training. Hence, we can introduce definite posture-making exercises in the calisthenic work. Neuromuscular control has developed far enough for the children to execute exercises with a fair degree of accuracy. Hence, the

teacher is warranted in expecting reasonable precision. Preciseness in calisthenics secured here will pay large dividends through the balance of school life. The imitative procedure so useful in the lower grades is not only ineffective here, but in many cases there is a direct revolt against it—the children begin to feel they are too grown-up for these former childish ways. Pure calisthenics may be used quite effectively.

(c) Lesson Plan

To meet the hygienic, postural and special motor training needs of this age we can well use a lesson plan of eight exercises. Using our lesson plan as a basis we can and should use all the exercise types outlined, with the exception of trunk-lowering exercises, abdominal exercises and special exercises. While trunk lowering is a splendid postural exercise, and we have established the point that this group is in need of postural work, in actual experience we find that they cannot execute this particular exercise with sufficient success to warrant its inclusion in the lesson plan. Because of the fact that this work is usually carried on in the schoolroom, with the children dressed, and with the sexes mixed, on-floor exercises cannot be readily used. Vigorous abdominal exercises are therefore excluded. As this group has no outstanding special needs special exercises are excluded also.

The following chart outlines, in a rough way, the types of exercises that should be used, the number of times that each exercise should be repeated, the approximate period of time that should be devoted to each and the method for conducting each and with intermediate grade school classes (Table III):

TABLE III

Exer. Type	*Repeated*	*Working Time*	*Method of Exercising*
1. Arm	6-8 times	20-30 seconds	Command
2. Trunk turning or sideward bending	6-8 times	20-35 sec.	Rhythm
3. Leg raising	6-8 times	20-35 sec.	Rhythm
4. Neck and chest	4-6 times	20-35 sec.	Command
5. Heavy leg	6-8 times	20-35 sec.	Rhythm
6. Trunk forward-bending	6-8 times	20-35 sec.	Rhythm
7. Stepping	30-40 times	20-35 sec.	Rhythm
8. Breathing	4-6 times	20-30 sec.	By any method

It will be noticed that in the above plan the several exercise types used have been arranged in a slightly different order from the arrangement used in the original plan. Trunk turning and trunk sideward-bending have been coupled in the same division. In view of the fact that these two types possess many aspects quite similar in nature and there is no particular need for including both in a lesson plan for this group, since the hygienic demands are rather limited, they have been joined in this way with the idea that the instructor may use either type as he sees fit.

The trunk forward-bending type and the heavy leg type have been reversed from the order suggested in the General Lesson Plan. In this plan there are three exercises intervening between the leg exercise and the stepping exercise. In the present plan all three of these have been excluded, leaving these two types of leg exercises together. To obviate this the indicated reversal has been made.

(d) Length of Period

Under ordinary conditions a class of this type, following the above lesson plan, should actually work from three to four minutes. Allowing from two to four minutes for extra-exercising activities (getting ready, introducing exercises, resting, returning to seats, etc.), a total time allowance of from five to eight minutes should be ample.

(e) Teaching Principles

While a few of the simpler four-count exercises may be used with the fifth and sixth grades, the work, for the most part, should be confined to two-count exercises. Children of this age are still unable to handle four-count exercises with much facility. All of these exercises should be introduced and carried on once or twice by the command method and all, with the exception of the arm, and the neck and chest exercise should then be carried on by the rhythm method. The arm and the neck and chest exercise should always be carried on by the command method or, better still, the number method.

In introducing a set of new exercises, or starting with a new class, the command method should be used almost exclusively. As the pupils become more familiar with the exercises and execute them with greater precision the usage of this method can be re-

duced until it is used only once to present the exercise. The naming method of introducing the exercises can be used with this group, but the use of this method should be delayed until after the exercises have been well learned. Even after the naming method has been introduced, for the sake of insuring good execution, the exercises should be occasionally practiced by the command or number method.

IV. AGES TWELVE TO FOURTEEN (JUNIOR HIGH SCHOOL)

In the Junior High School conditions, insofar as the physical needs of the boy and the course of study to meet these needs are concerned, are again considerably altered. At this age the boy is passing through the pubescent stage of development; the period that marks the change between childhood and boyhood. In normal surroundings the boy of twelve, thirteen or fourteen years of age tends to engage in a wide variety of physical activity; but, as pointed out before, conditions too often are not normal and the boy is denied the opportunity. To meet this need, therefore, the school should provide an extensive program of activities; calisthenics, stunts, individual athletics, mass games, organized games, gymnastic dancing, combative contests and other miscellaneous activities should all be used. This period marks the beginning of the serious physical education of the boy.

(a) Calisthenics Especially Significant

Among many physical needs of this group, posture training, training in localized motor control and disciplinary training are of paramount significance. At this stage the boy is growing rapidly and his body is quite plastic. Allowed to develop without the normal amount of exercise, such as modern conditions make more or less mandatory, the body tends to develop in horribly deformed attitudes and positions. At this time and for the same reasons the boy tends to become awkward and clumsy; he loses the ability to handle himself efficiently and with sureness. And at this same time he is more or less high-tempered and irresponsible. An extensive program of supervised physical activity will contribute a lot toward improving these conditions, but no one thing contributes quite so much as a well-organized, well-taught course in calisthenics.

All the exercises build up and strengthen the general musculature; postural exercises set up the body in desirable postural positions; and if preciseness is demanded in the execution of all the exercises, both localized motor control and self-discipline are engendered.

(b) Lesson Plan

To meet the work requirement for this group, all the exercise types included in our original lesson plan, excepting special exercises, should be used. For the reason that the regular exercise types offer practically all that is desired, special exercises can be dispensed with. In view of their general similarity the exercises of trunk turning and trunk sideward-bending may be placed in the same group and employed interchangeably. There are thus ten distinct families of exercises to be used.

The following chart outlines the lesson plan for Junior High School boys. It covers the types of exercises to be used, the number of times each exercise should be repeated, the amount of time to be devoted to each exercise and the method by which each exercise should be performed (Table IV):

TABLE IV

Exercise	*Repeated*	*Working Time*	*Method of Performance*
1. Arm	8-10 times	20-40 sec.	Number
2. Trunk turning or sideward-bending	8-10 times	20-40 sec.	Rhythm
3. Leg raising	8-10 times	20-40 sec.	Rhythm
4. Neck and chest	6-8 times	20-40 sec.	Number
5. Trunk forward-bending	8-10 times	20-40 sec.	Rhythm
6. Heavy leg	8-10 times	20-40 sec.	Rhythm
7. Trunk lowering	6-8 times	20-40 sec.	Number
8. Abdominal	8-10 times	20-40 sec.	Rhythm
9. Stepping	8-10 times	20-40 sec.	Rhythm
10. Breathing	6-8 times	20-40 sec.	By any method

(c) Teaching Methods

In introducing new exercises the command method should be used until they have been well learned. Not only are exercises done correctly far more beneficial, but if they are taught well in

the beginning the instructor will relieve himself of a great deal of future bother. Besides, precise work is essential to the best motor-control training. After the exercises have been well learned they should be conducted as outlined above. It will be noticed that the three exercises primarily devoted to posture training—arm, neck and chest, and trunk lowering—are to be executed by a response method. This method is recommended on the grounds that it lends itself to the most effective postural training work. Either two-position or four-position exercises may be used. In either case the exercises selected should be the simplest that can be devised. Pupils of this age do not learn complicated exercises well and it should be remembered that simple exercises well done are far more effective than complicated exercises poorly done.

(d) Length of Period

Under ordinary conditions the above lesson plan calls for from five to seven minutes of actual exercising. Allowing from four to five minutes for extra exercising activities, we have periods from nine to twelve minutes in length. Under ordinary conditions this should be ample time allowance for calisthenic work with these groups.

V. AGES FIFTEEN TO SEVENTEEN (SENIOR HIGH SCHOOL)

In the Senior High School conditions begun in the Junior High School are considerably augmented. At this age the majority of schoolboys engage in free physical activity far less than do those who are younger. In city schools those who play on the varsity athletic squads and a few others playing on independent teams get a good dosage of physical work, but the remainder do not get sufficient for their general growth needs. To meet this need the school should promote a broad program of education in the several desirable types of physical activity. Athletic games, combative contests, tumbling stunts, apparatus stunts, gymnastic dancing, individual athletics, aquatics, calisthenics and other activities as facilities afford, all should be included. By making this course an instructional program instead of a play program we not only produce large hygienic results but we teach the boy a great number of activities for leisure time usage.

(a) Utility of Calisthenics

Insofar as calisthenics is concerned the student at this age is approaching manhood; his physique is in its final stage of development and is very susceptible to training. This is an excellent time to set up good postural habits, develop localized motor control, establish desirable coördinations, make the joints flexible and supple, and improve the general musculature by exercising the fundamental muscle groups, especially those which are neglected in the natural activities. It is the time for training the body beautiful—erect, supple, agile, healthy, enduring, strong. To this end it is desirable to use a complete set of exercises; all twelve of the types included in our original plan should be found in each lesson.

(b) Lesson Plan

The following table outlines the general nature of drills for this group. The exercise types, the frequency of repetition, the time allotment, and the method of performance, all are covered (Table V):

TABLE V

Exercise	*Repeated*	*Working Time*	*Method of Exercising*
1. Arm	10-12 times	25-50 sec.	Number or Rhythm
2. Trunk turning	10-12 times	25-50 sec.	Rhythm
3. Leg raising	10-12 times	25-50 sec.	Rhythm
4. Trunk sideward-bend	10-12 times	25-50 sec.	Rhythm
5. Neck and chest	6-10 times	25-50 sec.	Number
6. Trunk forward-bend	10-12 times	25-50 sec.	Rhythm
7. Heavy leg	10-12 times	25-50 sec.	Rhythm
8. Trunk lowering	6- 8 times	25-50 sec.	Number
9. Abdominal	10-12 times	25-50 sec.	Rhythm
10. Special	10-12 times	25-50 sec.	Rhythm
11. Stepping	20-30 times	25-50 sec.	Rhythm
12. Breathing	6- 8 times	25-50 sec.	By any method

(c) Teaching Principles

Beginning with a new class or a new set of exercises it is best to introduce the exercises by the command method, associating

names with each exercise from the start. After the exercises have been learned by their names they may be introduced by the naming method and work started at once. By way of example we have: "The Stretcher—Ready—By the numbers—One—Two," etc., or "The Leg Lifter—Ready—In rhythm—Start—One—Two," etc.

(d) Length of Period

In executing a drill of the above type the class, depending on the number of times each exercise is repeated, the number of two-position and four-position exercises used and the amount of time spent in introducing the exercises, works from seven to ten minutes. Allowing five minutes for extra exercising activities, which under ordinary conditions should be ample, from twelve to fifteen minutes is about the proper time allowance for calisthenic lessons for this group.

VI. AGES EIGHTEEN TO TWENTY-FIVE (COLLEGE)

The great majority of college students are physically quite inactive. A few play on the varsity athletic teams, a few more are attached to independent athletic organizations and in this way lead a very active physical life, but in most cases a little dancing, an occasional game of golf, handball, basketball, volleyball, tennis or some other sport constitutes the student's physical activity. The intramural program and the program of required physical training, both of which are developing very rapidly at present, are to some degree improving this situation, but if the information secured through medical inspection, physical examination, physical efficiency tests and general observation can be accepted as a guide, the average college student is in need of a broad program of physical activity. One hour a day, five days each week, for the entire period of college life is not too much. Organized games, individual athletics, acrobatic stunts, combative contests, swimming, calisthenics and a score of similar activities should all have a place.

For the purpose of building up posture, developing motor control, suppleness and agility, and creating a good hygienic reaction, calisthenics are useful here. By means of this work we achieve results that are immediately beneficial. At this particular stage, though, we have another situation forced upon us which

should be faced and met by the educational authorities. Briefly, this is as follows:

(a) Calisthenics for Life Use

Upon leaving college the individual's opportunities for engaging in physical activity become considerably diminished. He marries, settles in a home in the suburbs or an apartment in town, becomes tied up in business and in general takes on the responsibilities of modern adult life. Because of the absence of facilities, the lack of money, the pressure of business, home conditions, etc., the majority of men do not participate in any form of physical activity. The only possible form of exercise for a great number of men is calisthenics. Exercise of this sort can be practiced in the bedroom, in the hotel room, on the train, in short, anywhere that the individual happens to be. And it may be practiced regularly; another thing in its favor.

Furthermore, a great number of men are taking their exercise in this way. In proof of this we have the fact that Walter Camp has sold over three hundred thousand copies of his so-called *Daily Dozen;* there are several sets of exercises produced on phonograph records; a number of radio stations broadcast setting-up drills every morning. Of the seventy-four persons in attendance at a certain business and professional men's club dinner, twenty-three indicated the fact that they did a little exercising every morning or night.

A short investigation as to the types of exercises used, however, has convinced the writer that in every case where the exerciser uses his own set, as he calls it, the drill falls far short of its possibilities. There is a great preponderance of poor or useless exercises and the dosage for a given exercise varies anywhere from five to one hundred repetitions.

The university presumes to fit men for life. To live well necessitates exercise. The only form of exercise possible for many men is calisthenics. And the average man has no knowledge of what constitutes good exercises. This being true, it seems that it is quite logically the function of the university to teach the students one or two sets of exercises which they can use for this purpose for the balance of life.

Drills of this sort are most effective when linked with a catchy

title. Walter Camp calls his series the "Daily Dozen." The set used at the University of Illinois is called the "Illini Eleven." Other titles which might be effective are the "Big Ten," the "Getting-up Drill," the "Maroon Muscle Makers," the "Buckeye Body Builders," etc. Each school should adopt a title that fits its local situation.

(b) Lesson Plan

Calisthenics thus must serve two ends in college; first, provide the usual immediate results and second, teach the students a set of exercises which can be used when college days are over. The following table outlines in a general way the make-up of a drill for this group (Table VI):

TABLE VI

Exercise	*Repeated*	*Working Time*	*Method of Exercising*
1. Arm	12-15 times	30-60 sec.	Rhythm or At Will
2. Trunk turning	12-15 times	30-60 sec.	Rhythm or At Will
3. Leg raising	12-15 times	30-60 sec.	Rhythm or At Will
4. Trunk sideward-bend	12-15 times	30-60 sec.	Rhythm or At Will
5. Neck and chest	8-10 times	30-40 sec.	Slow Rhythm or At Will
6. Trunk forward-bend	12-15 times	30-60 sec.	Rhythm or At Will
7. Heavy leg	12-15 times	30-60 sec.	Rhythm or At Will
8. Trunk lowering	8-10 times	30-60 sec.	Slow Rhythm or At Will
9. Abdominal	12-15 times	30-60 sec.	Rhythm or At Will
10. Special	12-15 times	30-60 sec.	Rhythm or At Will
11. Stepping	30-60 times	30-60 sec.	Rhythm or At Will
12. Breathing	6- 8 times	30-40 sec.	By any method

(c) Methods of Instruction

It will be observed that in the above outline the three exercises mainly postural in nature, which have heretofore been conducted by the number method, are to be conducted by the rhythm method. The rhythm method is to be recommended on the grounds that these exercises may be quite effectively executed by this method and that persons of college age are sufficiently well-developed to perform them so. To get the most results, though, the neck and chest exercise and the trunk-lowering exercise should be conducted in very slow rhythm.

Special attention should be called to the fact that individuals of this age are totally capable of working by the at will method. In view of the fact that the benefits and values of working by this method are superior to working by any of the other methods, this method should be used whenever possible.

This group is mature enough to handle four-position exercises effectively, so either two- or four-position exercises may be used. As with all groups, though, it should be remembered that simple exercises are the best. For the purpose of getting good performance, new exercises should be introduced by the command method. After the class has learned to do the exercises well, this may be dispensed with and the naming method used.

(d) Length of Period

In executing the above type drill the average class would work from eight to twelve minutes. Allowing four minutes for extra-exercising activities, a time allowance of from twelve to sixteen minutes should be ample for calisthenic lessons for this group.

VII. AGES TWENTY-SIX TO FORTY-FIVE (BUSINESS AND PROFESSIONAL MEN)

The next group with which we have to deal is rather extended in its age limits, but inasmuch as the condition and needs of all are essentially the same we can treat them as a unit. At this stage of life the individual's physical mechanism has reached maturity; the muscles, bones, vital organs and other structures have completed normal growth and the body frame, more or less, has assumed its final shape. If the individual has led a normally active physical

life, his body should be in a fair condition of health, fairly upright in carriage, fairly supple, etc. In the face of the physiologic fact that function makes structure and disuse makes for decay, the individual must either engage in a fairly vigorous program of physical activity or witness physical deterioration.

Prior to this stage our project has been largely one of education and training—teaching the fundamentals of physical activities and training the body according to our wishes. At this stage our project is primarily that of keeping fit—holding that which we have already gained. Adult recreational activities, such as volleyball, handball, playground ball, tennis, golf, swimming, riding, hunting, fishing, etc., are excellent for this purpose, but, as pointed out previously, while they tend to produce good organic reaction, good general muscle tone, endurance and strength, and contribute somewhat toward maintaining suppleness, posture, body control, and so on, they do not contribute all that is needed if the best conditions are to be gained and retained. To gain all that physical exercise has to offer calisthenics should be practiced also.

(a) Practicability of Calisthenics

Besides, modern conditions make it quite impossible for the average individual to engage in recreational activities regularly. Money, time, facilities and convenience are all factors which seriously interfere with an effort to realize this desirable end. On the other hand there is very little reason why calisthenics cannot be practiced daily. The practice of visiting an athletic club, Y.M.C.A. or community center two or three times a week to go through the exercises and play a game or two, and then doing the calisthenic work at home in the office or shop on the intervening days is recommended.

(b) Lesson Plan

In view of the manifold needs of this group—need for a thorough workout, need for posture training, need for maintaining good muscular tone, need for maintaining a fair degree of flexibility in the extremities and trunk—it becomes necessary to increase the dosage of work. To increase the dosage of work there are two possibilities: (1) Increase the number of repetitions of the exercise,

and (2) increase the number of exercises. Fatigue and monotony preclude the possibility of increasing the frequency of repetitions. Either the fatigue point arrives after twelve or fifteen repetitions and we must halt to avoid this or the exercise becomes monotonous at about the same time and we must be equally careful to avoid this. The only other possibility is to increase the number of exercises. This may be readily done by increasing the number of special exercises. The regular lesson plan should be followed up to this point and here several special exercises should be introduced, closing the drill with the regular stepping and breathing exercises.

The following chart outlines in a general way the plan of organization and conduct for drills with this group (Table VII):

TABLE VII

Exercise	*Repeated*	*Working Time*	*Method of Exercising*
1. Arm	12-15 times	30-60 sec.	Rhythm or At Will
2. Trunk turning	12-15 times	30-60 sec.	Rhythm or At Will
3. Leg raising	12-15 times	30-60 sec.	Rhythm or At Will
4. Trunk sideward-bend	12-15 times	30-60 sec.	Rhythm or At Will
5. Neck and chest	8-10 times	30-60 sec.	Slow Rhythm or At Will
6. Trunk forward-bend	12-15 times	30-60 sec.	Rhythm or At Will
7. Heavy leg	12-15 times	30-60 sec.	Rhythm or At Will
8. Trunk lowering	8-10 times	30-60 sec.	Slow Rhythm or At Will
9. Abdominal	12-15 times	30-60 sec.	Rhythm or At Will
10. Special (seven)	12-15 times each	30-60 sec. each	Rhythm or At Will
11. Stepping	50-100 times	30-60 sec.	Rhythm or At Will
12. Breathing	6-8 times	30-60 sec.	By any method

There is a total of eighteen exercises in the above chart, eleven regular and seven special. The special exercises may be of any sort so long as they meet the special hygienic needs of this group. Exercises of a general big muscle type, such as large trunk, heavy leg, stepping and so-called on-floor exercises, are particularly fitting and beneficial.

(c) Length of Period

In executing this drill the average class, depending on the number of times each exercise is repeated, the number of two-position and four-position exercises used and the amount of time spent in introducing exercises, would work from twelve to sixteen minutes. With four minutes for extra-exercising activities, which in normal circumstances should be ample, from sixteen to twenty minutes should be set aside for this lesson.

(d) Principles of Instruction

To meet the common demand all of the exercises are carried on by the rhythm method. The two exercises primarily postural in type should be carried on quite slowly and deliberately; the others may be executed at normal rhythm. In many cases to make this work still more interesting and appealing, piano music is introduced to accompany the exercises. With a good pianist this is especially worth while, since, artfully played, the music serves to get increased results and makes the work as pleasant as dancing. Under certain favorable conditions the at will method may be also used.

In beginning with a new class or introducing new exercises to an old class each exercise should be introduced by the demonstration method while the class is at a halt. As each exercise is introduced it should be named; by using the same exercises or drill for a period of two or three months the demonstration can be eventually discontinued and each exercise can be eventually introduced by the naming method. In volunteer classes, though, as has been previously pointed out, there is a constant influx of new members. Members joining the class after the naming method has started cannot pick up exercises from their names. To meet this condition the instructor, standing before the class, should go through each exercise two or three times with the class. From this demonstration new members can execute and learn them.

VIII. AGES FORTY-SIX ON (OLDER MEN)

The last group with which we have to deal is that of older men—men past forty-five years of age. Men of this age are physically on the decline; the muscles are losing their tone; strength, endurance, suppleness, agility, and upright carriage is on the ebb; organic health and vitality is decreasing. It is too late to develop these qualities to any considerable degree; the chief need is to prevent further deterioration. At this age our chief objective, perhaps, is the development and maintenance of organic health. This factor more than any other tends to broaden and prolong life. Inasmuch as good muscle tone, endurance, posture, suppleness, etc., make direct contributions to the securement of organic health, activities which effect these should be practiced. To these ends institutions promoting work with these groups should foster and organize physical recreational activities such as volleyball, handball, golf, medicine ball, games, horseback riding, etc., and calisthenics.

(a) The Lesson Plan

In shaping up the lesson for this group, it should be definitely borne in mind that men of this age have no interest in the science or technique of the work. Their chief need and desire is for a fairly vigorous "work-out," as they term it, covering the fundamental muscle groups. To meet these requirements the work should include exercises involving large movements and simple coördinations; it should be carried on in an indefinite way in rhythm (definite precise work is not necessary and should not be expected) and, if possible, to make the work more pleasant, musical accompaniment should be used. Due to the fact that men of this age normally have less physical strength, endurance and vitality than younger men, the dosage of work must be considerably reduced from that used with the group previously discussed. This necessitates both a reduction in the number of exercises and a reduction in the number of times each exercise is repeated.

The following chart outlines a suitable program for this group (Table VIII):

TABLE VIII

Exercise	*Repeated*	*Working Time*	*Method of Exercising*
1. Arm	8- 12 times	20-40 sec.	Rhythm At Will
2. Trunk turning	8- 12 times	20-40 sec.	Rhythm At Will
3. Leg raising	8- 12 times	20-40 sec.	Rhythm At Will
4. Trunk sideward-bend	8- 12 times	20-40 sec.	Rhythm At Will
5. Neck and chest	8- 12 times	20-40 sec.	Slow Rhythm At Will
6. Trunk forward-bend	8- 12 times	20-40 sec.	Rhythm At Will
7. Heavy leg	8- 12 times	20-40 sec.	Rhythm At Will
8. Trunk lowering	8- 12 times	20-40 sec.	Slow Rhythm At Will
9. Abdominal	8- 12 times	20-40 sec.	Rhythm At Will
10. Special	8- 12 times	20-40 sec.	Rhythm At Will
11. Stepping	50-100 times	30-60 sec.	Rhythm At Will
12. Breathing	8- 12 times	20-40 sec.	By any method

(b) Principles of Teaching

In the beginning, all new exercises should be introduced by the demonstration method and carried on by the rhythm or slow rhythm methods. By naming the exercises they soon become known by their names and the instructor can then introduce them by merely naming them. If the instructor follows the plan of going through each exercise two or three times with the class, members who have failed to associate the exercises with their names and new members who do not know them at all can pick them up and get their full share of work. With this group precise work is almost out of question and it is of questionable worth if it were possible. In the light of this fact the instructor should not lay much emphasis on the necessity for exact execution, but should content himself

with fair performances. The at will method of conduct should be attempted if conditions are favorable.

(c) Length of Period

Ordinarily a lesson of the above type would furnish the group with from six to ten minutes of exercising. Adding four or five minutes for extra-exercising activities we have drill periods of from ten to fifteen minutes in duration. Owing to the fact that this group tires more readily than younger groups it becomes necessary to provide rest periods with greater frequency than with any of the other groups.

IX. PROGRAM MAY BE ALTERED OCCASIONALLY

It should be pointed out that, while the outlines suggested above should be generally followed, it is a good idea, for a variety of reasons, to occasionally deviate from them. If the air is cold a vigorous stepping exercise introduced at the beginning will serve to warm the class. If the class becomes obstreperous, a short period of purely response work is usually effective in reproducing order. If the class seems "dead," a few new exercises may bring them back to "life." And then, too, merely for the purpose of avoiding monotony, the exercises may be introduced in a different sequence. Care should be taken, however, not to overdo the matter of introducing variations, the regular program should constitute the bulk of the season's work and the variations should be used only occasionally.

X. OTHER METHODS MAY BE SUBSTITUTED

Whenever conditions are favorable—classes are small, morale is good, and so on—the at will method of conduct might be used in place of the prescribed methods. The results to be gained from the successful use of this method are so far superior to the more popular methods that the attempt should be made whenever there seems to be a reasonable likelihood for success.

Furthermore, it so happens that there are a number of excellent exercises which are so complex and so uncoördinated that the average class executes them in unison with difficulty. Exercises of this type, in many instances, can be carried on more effectively by the at will method than by the usual rhythm method. There-

fore at any time that an exercise of this type is introduced the instructor should try it by this method.

Similarly in a number of instances the cadence method may be substituted for the rhythm method. For the most part, though, this substitution can be made only where the exercisers have considerable ability along the lines of localized motor control and where a high grade of class morale exists. In the light of these conditions the cadence method may be used with good results only with classes in the Senior High School and college and classes of young and middle-aged men who have had considerable preliminary training. It should be mentioned, however, that to get real results from this method of exercising requires superior teaching skill and that any one who contemplates using it should first give the matter a thorough study.

CHAPTER X

MODEL LESSONS FOR NORMAL GROUPS

It was pointed out in the previous chapter that the lesson plan varies with the several age groups and that these age groups are normally as follows:

1. Ages 6-7-8 (Lower Grades).
2. Ages 9-10-11 (Intermediate Grades).
3. Ages 12-13-14 (Junior High School).
4. Ages 15-16-17 (Senior High School).
5. Ages 18-25 (College and Young Men).
6. Ages 26-45 (Middle-aged Men).
7. Age 46- (Older Men).

For the purpose of giving the reader a clear conception as to the make-up of lessons for these several groups, model lessons for each will be outlined in this chapter.

I. AGES 6-7-8 (LOWER GRADES)

Story Play, "At the Zoo."

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Tigers Stretches" Start. pos. Standing erect. Raise hands over head, hook fingers (claws), rise on toes and stretch. Body normal.	4-6	At Will
2. Trunk turning or trunk sideward-bending	"The Bear Wabbles" Start. pos. Standing erect, feet apart. Lean slightly forward. Bend the trunk from side to side.	4-6	At Will
3. Leg raising	"The Ostrich Promenades" Start. pos. Standing erect. Keeping the knees stiff, the legs are alternately swung forward. No ground is gained.	4-6	At Will

I. AGES 6-7-8 (LOWER GRADES)—Continued

Type	*Exercise*	*Repeated*	*Method*
4. Trunk forward-bending	"The Elephant Bows" Start. pos. Standing erect, hands forward with fingers interlocked. (This is the elephant's trunk). Bend trunk forward so hands touch ankles. Raise trunk to starting position.	4-6	At Will

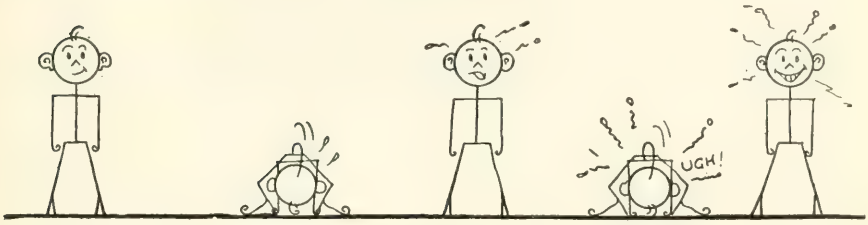


FIG. 132

5. Heavy leg	"The Monkey Squats" (Fig. 132) Start. pos. Standing erect, feet apart. Bend knees and, with arms inside of legs, touch hands to floor. Rise to starting position.	4-6	At Will
6. Stepping	"The Pony Runs" Start. pos. Standing erect. Running in place.	15-20	At Will
7. Breathing	"The Buffalo Snorts" Start. pos. Standing erect. Fill the lungs, breathing in through the nose. Blow air forcefully out through the mouth.	4-6	At Will

FIG. 133

II. AGES 9-10-11 (INTERMEDIATE GRADES)

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Ceiling Raiser" Start. pos. Standing erect. 1. Hands upward (palms up). Stretch and push upward. 2. Hands normal.	6-8	Command or Number
2. Trunk turning or trunk sideward-bending	"The Steamboat" (Fig. 133) Start. pos. Standing erect, feet apart, hands sideward. 1. Trunk bent right, right hand on floor. 2. Trunk bent left, left hand on floor.	6-8	Rhythm
3. Leg raising	"The Sideward Kicker" Start. pos. Standing erect. 1. Right foot raised sideward. 2. Right foot normal. 3. Left foot raised sideward. 4. Left foot normal.	6-8	Rhythm
4. Neck or chest	"The Neck Presser" Start. pos. Standing erect. 1. Head pressed backward. 2. Head normal.	4-6	Command or Number
5. Heavy leg	"The Knee Cracker" Start. pos. Standing erect. 1. Knees fully bent, hands upward. 2. Knees normal, hands normal.	6-8	Rhythm
6. Trunk forward - bending	"The Jacknife" Start. pos. Standing erect, feet apart, hands at waist. 1. Trunk bent forward, hands touching toes. 2. Trunk normal, hands at waist.	6-8	Rhythm

II. AGES 9-10-11 (INTERMEDIATE GRADES)—Continued

Type	*Exercise*	*Repeated*	*Method*
7. Stepping	"The Forward Toe Touch" Start. pos. Standing erect, hands on hips. 1. Hop on right foot, touch left toe forward. 2. Hop on both feet. 3. Hop on left foot, touch right toe forward. 4. Hop on both feet.	20-30	Rhythm
8. Breathing	"The Expander" Start. pos. Standing erect. 1. Hands turned outward and inhale. 2. Hands normal and exhale.	4-6	Command or Number

III. AGES 12-13-14 (JUNIOR HIGH SCHOOL)

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Signaler" Start. pos. Standing erect. 1. Hands sideward. 2. Hands upward. 3. Hands sideward. 4. Hands normal.	8-10	Number
2. Trunk turning or trunk sideward-bending	"The Traffic Cop" Start. pos. Standing erect. 1. Trunk turned right, right hand sideward. 2. Trunk normal, hand normal. 3. Trunk turned left, left hand sideward. 4. Trunk normal, hand normal.	8-10	Rhythm
3. Leg raising	"The Knee Raiser" Start. pos. Standing erect. 1. Right knee upward. 2. Right knee normal. 3. Left knee upward. 4. Left knee normal.	8-10	Rhythm

III. AGES 12-13-14 (JUNIOR HIGH SCHOOL)—Continued

Type	*Exercise*	*Repeated*	*Method*
4. Neck or chest	"The Neck Twister" Start. pos. Standing erect. 1. Head turned right and pressed backward. 2. Head normal. 3. Head turned left and pressed backward. 4. Head normal.	6-8	Number
5. Trunk forward - bending	"The Kow Tow" Start. pos. Standing erect, feet apart, hands upward. 1. Trunk bent forward, hands touching toes. 2. Trunk normal, hands upward.	8-10	Rhythm

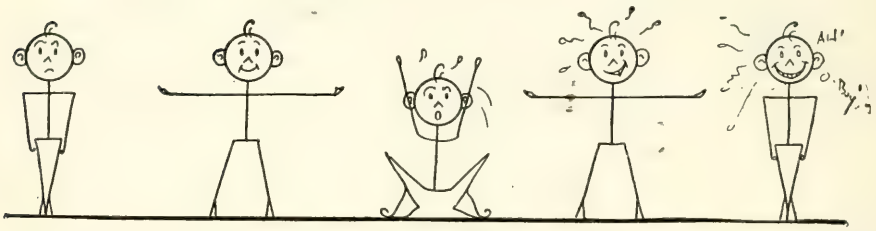


FIG. 134

6. Heavy leg	"The Sinker" (Fig. 134) Start. pos. Standing erect, 1. Right foot sideward, hands sideward. 2. Knees fully bent, hands upward. 3. Knees normal, hands sideward. 4. Right foot normal, hands normal.	8-10	Rhythm
7. Trunk lowering	"The Half Bow" Start. pos. Standing erect, hands on hips. 1. Trunk half lowered. 2. Trunk normal.	6-8	Number

III. AGES 12-13-14 (JUNIOR HIGH SCHOOL)—Continued

Type	*Exercise*	*Repeated*	*Method*
8. Abdominal	"The Tattoo" (Fig. 135) Start. pos. Seat on floor. 1. Feet apart. 2. Feet normal. 3. Feet at buttocks. 4. Feet normal.	8-10	Rhythm

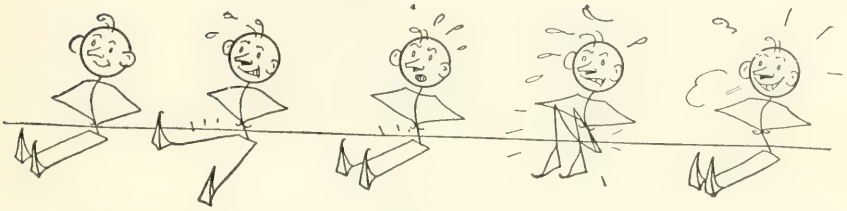


FIG. 135

9. Stepping	"Jumping Feet Apart and Together" Start. pos. Standing erect. 1. Jump feet apart. 2. Jump feet together.	30-40	Rhythm
10. Breathing	"The Side Expander" Start. pos. Standing erect. 1. Hands sideward and inhale. 2. Hands normal and exhale.	6-8	Command or Number

IV. AGES 15-16-17 (SENIOR HIGH SCHOOL)

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Uplifter" Start. pos. Standing erect. 1. Hands on neck. 2. Hands upward. 3. Hands on neck. 4. Hands normal.	10-12	Number
2. Trunk turning	"The Weather Vane" Start. pos. Standing erect, feet apart, hands sideward. 1. Trunk turned right. 2. Trunk turned left.	10-12	Rhythm

IV. AGES 15-16-17 (SENIOR HIGH SCHOOL)—Continued

Type	*Exercise*	*Repeated*	*Method*
3. Leg raising	"The Booter" Start. pos. Standing erect. 1. Right hand forward, kick hand with right foot. 2. Right foot and right hand normal. 3. Left hand forward, kick hand with left foot. 4. Left foot and hand normal.	10-12	Rhythm
4. Trunk sideward bending	"The Liver Squeezer" Start. pos. Standing erect, feet apart, hands upward with fingers interlocked. 1. Trunk bent right. 2. Trunk normal. 3. Trunk bent left. 4. Trunk normal.	10-12	Rhythm
5. Neck and chest	"The Nodder" Start. pos. Standing erect. 1. Head bent forward (chin drawn in). 2. Head bent backward (chin drawn in).	6-8	Number
6. Trunk forward	"The Reaper" Start. pos. Standing erect. 1. Right foot forward, hands at waist. 2. Trunk bent forward, hands touching floor. 3. Trunk normal, hands at waist. 4. Right foot normal, hands normal.	10-12	Rhythm

IV. AGES 15-16-17 (SENIOR HIGH SCHOOL)—Continued

Type	*Exercise*	*Repeated*	*Method*
7. Heavy leg	"The Knee Bender" Start. pos. Standing erect, hands on hips. 1. Knees half bent. 2. Knees fully bent. 3. Knees half bent. 4. Knees normal.	10-12	Rhythm
8. Trunk lowering	"Painful Perry" Start. pos. Standing erect, hands on neck. 1. Trunk half lowered. 2. Hands upward. 3. Hands on neck. 4. Trunk normal.	6-8	Number
9. Abdominal	"The Spreader" Start. pos. Back on floor. 1. Feet upward. 2. Feet apart. 3. Feet together. 4. Feet normal.	10-12	Rhythm
10. Special	"The Jumper" Start. pos. Standing erect. hands upward. 1. Knees half bent, trunk half lowered, hands backward. 2. Knees normal, trunk normal, hands upward. 3. Knees half bent, trunk half lowered, hands backward. 4. Swing arms upward and jump upward, landing with feet together.	10-12	Rhythm
11. Stepping	"Alternate Stride Jumping" Start. pos. Standing erect. 1. Feet stride right. 2. Feet stride left.	40-50	Rhythm

IV. AGES 15-16-17 (SENIOR HIGH SCHOOL)—Continued

Type	*Exercise*	*Repeated*	*Method*
12. Breathing	"The Upward Expander" Start. pos. Standing erect. 1. Hands upward and inhale. 2. Hands normal and exhale.	6-8	Command

V. AGES 18-25 (COLLEGE AND YOUNG MEN)

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Wing Flapper" Start. pos. Standing erect. 1. Hands on neck. 2. Elbows forward. 3. Elbows sideward. 4. Hands normal.	12-15	Slow rhythm or at will
8. Trunk turning	"The Toe Tapper" Start. pos. Standing erect. 1. Trunk turned right, hands sideward. 2. Trunk turned left and bent forward, right hand touching left toe. 3. Trunk raised and turned right, hands sideward. 4. Trunk normal, hands normal.	12-15	Rhythm or at will
3. Leg raising	"The Stork" Start. pos. Standing erect hands on hips. 1. Right knee raised forward. 2. Right foot raised sideward. 3. Right knee raised forward. 4. Right knee normal. 5-8. Same with left leg.	6-8	Slow rhythm or at will

V. AGES 18-25 (COLLEGE AND YOUNG MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
4. Trunk sideward - bending	"The Bend Stretcher" Start. pos. Standing erect, hands on neck. 1. Trunk bend right. 2. Hands upward. 3. Hands on neck. 4. Trunk normal. 5-8. Same to left.	6-8	Rhythm or at will
5. Neck or chest	"The Neck Straightener" Start. pos. Standing erect, hands on hips. 1. Head pressed backward. 2. Head bent forward (chin on chest). 3. Head pressed backward. 4. Head normal.	8-10	Slow rhythm or at will
6. Trunk forward - bending	"The Forward Bender" Start. pos. Standing erect, feet apart, hands on neck. 1. Trunk bent forward, elbows forward touching knees. 2. Trunk normal, elbows sideward.	12-15	Rhythm or at will
7. Heavy leg	"The Bounder" Start. pos. Standing erect, hands on hips. 1. Knees fully bent. 2. Bound in place. 3. Bound in place. 4. Knees normal.	12-15	Rhythm or at will
8. Trunk lowering	"The Back Flattener" Start. pos. Standing erect, hands on hips. 1. Trunk lowered. 2. Trunk half lowered. 3. Trunk lowered. 4. Trunk normal.	12-15	Slow rhythm or at will

V. AGES 18-25 (COLLEGE AND YOUNG MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
9. Abdominal	"The Hamstring Special" Start. pos. Back on floor, hands under buttocks. 1. Knees at chest. 2. Feet upward. 3. Knees at chest. 4. Feet normal.	12-15	Rhythm or at will
10. Special	"The Touchback" Start. pos. Back on floor, hands under buttocks. 1. Feet upward and backward, body curled upward until feet touch floor behind head. 2. Feet and body normal.	12-15	Rhythm or at will
11. Stepping	"Alternate Hopping" Start. pos. Standing erect. 1. Step on right foot. 2. Hop on right foot. 3. Step on left foot. 4. Hop on left foot.	40-60	Rhythm or at will
12. Breathing	"The Lung Pumper" Start. pos. Standing erect. 1. Hands at chest and inhale. Pound chest alternately with hands (6 or 8 times with each). 2. Hands normal and exhale.	6-8	Command or at will

VI. AGES 26-45 (MIDDLE-AGED MEN)

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Winger" Start. pos. Standing erect. 1. Hands upward. 2. Hands sideward. 3. Hands upward. 4. Hands normal.	12-15	Rhythm or at will

VI. AGES 26-45 (MIDDLE-AGED MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
2. Trunk turning	"The Wringer" (Fig. 136.) Start pos. Standing erect, feet apart, hands at chest. 1. Trunk turned right, hands sideward. 2. Trunk normal, hands at chest. 3. Trunk turned left, hands sideward. 4. Trunk normal, hands at chest.	12-15	Rhythm or at will

FIG. 136

3. Leg raising	"The Cross Booter" Start. pos. Standing erect. 1. Left hand forward, kick left hand with right foot. 2. Left hand normal, right foot normal. 3. Right hand forward, kick right hand with left foot. 4. Right hand normal, left foot normal.	12-15	Rhythm or at will
4. Trunk sideward - bending	"The Intercostal Stretcher" Start. pos. Standing erect, feet apart. 1. Left hand upward, trunk bent right. 2. Left hand normal, trunk normal. 3. Right hand upward, trunk bent left. 4. Right hand normal, trunk normal.	12-15	Rhythm or at will

VI. AGES 26-45 (MIDDLE-AGED MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
5. Neck and chest	"The Chest Lifter" Start pos. Standing erect. 1. Chest upward. 2. Chest normal.	10-12	Number or at will
6. Trunk forward - bending	"The Belly Massage" Start. pos. Standing erect, feet apart, hands at waist. 1. Trunk bent forward, hands backward between legs. 2. Trunk normal, hands at waist.	12-15	Rhythm or at will
7. Heavy leg	"The Knee Buster—Sideward" Start. pos. Knees fully bent, hands on hips. 1. Right foot sideward (weight on left foot). 2. Right foot normal (weight on both feet). 3. Left foot sideward (weight on right foot). 4. Left foot normal (weight on both feet).	12-15	Rhythm or at will
8. Trunk lowering	"The Wooden Soldier" Start. pos. Standing erect, hands on hips. 1. Trunk half lowered. 2. Trunk lowered. 3. Trunk half lowered. 4. Trunk normal.	10-12	Slow rhythm or at will
9. Abdominal	"The Scissors" Start. pos. Back on floor, hands under buttocks, right foot upward, left foot one inch off floor. 1. Left foot upward, right foot one inch off floor. 2. Right foot upward, left foot one inch off floor.	12-15	Rhythm or at will

VI. AGES 26-45 (MIDDLE-AGED MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
10. Special	"The Down and Up" Start. pos. Standing erect. 1. Squat on floor. 2. Front support. 3. Squat on floor. 4. Stand erect.	12-15	Rhythm or at will
11. Special	"The Weeping Willow" Start. pos. Standing erect, hands on neck. 1. Trunk bent forward, elbows forward touching knees. 2. Trunk bent backward, elbows sideward.	12-15	Rhythm or at will
12. Special	"The Side Lunger" (Fig. 137.) Start. pos. Standing erect. 1. Right foot lunged sideward, hands on hips. 2. Left hand upward. 3. Left hand on hip. 4. Right foot normal, hands normal. 5.-8. Same to left.	6-8	Rhythm or at will
13. Special	"The Wind Jammer" Start. pos. Seat on floor, feet apart, hands on neck. 1. Trunk bent forward and turned left, right elbow on left knee. 2. Trunk normal. 3. Trunk bent forward and turned right, left elbow on right knee. 4. Trunk normal.	12-15	Rhythm or at will

FIG. 137

VI. AGES 26-45 (MIDDLE-AGED MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
14. Special	"The Cradle" Start. pos. Back on floor. 1. Feet upward. 2. Feet normal. 3. Seat on floor. 4. Back on floor.	12-15	Rhythm or at will

FIG. 138

15. Special	"The Starter" (Fig. 138.) Start. pos. Front support, left foot between hands. 1. Left foot normal, right foot between hands. 2. Right foot normal, left foot between hands.	12-15	Rhythm or at will
16. Special	"Jumping in Place" Start. pos. Standing erect. 1. Jump in place. 2. Jump in place.		
17. Stepping	"Cut Step Sideward" Start. pos. Standing erect. 1. Step on right foot, swing left foot sideward. 2. Hop on left foot. 3. Step on left foot, swing right foot sideward. 4. Hop on left foot.	30-50	Rhythm or at will

VI. AGES 26-45 (MIDDLE-AGED MEN)

Type	*Exercise*	*Repeated*	*Method*
18. Breathing	"The Bellows" (Fig. 139.) Start. pos. Standing erect. 1. Hands upward and inhale. 2. Trunk bent forward, hands touching toes and exhale.	6-8	By any method

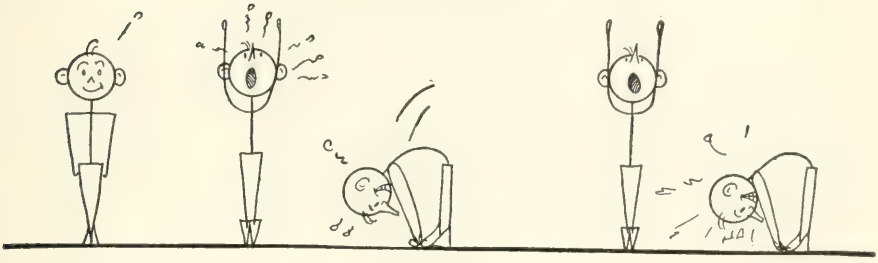


FIG. 139

VII. AGE 46 (OLDER MEN)

Type	*Exercise*	*Repeated*	*Method*
1. Arm	"The Outward Circler" Start. pos. Standing erect. The arms are swung across the front, upward and sideward in continuous circles.	8-12	Rhythm or at will
2. Trunk turning	"The Sausage Grinder" Start. pos. Standing erect, feet apart, hands sideward. 1. Trunk bent forward, right hand touching outside of left knee. 2. Trunk normal, right hand sideward. 3. Trunk bent forward, left hand touching outside of right knee. 4. Trunk normal, left hand sideward.	8-12	Rhythm or at will

VII. AGE 46 (OLDER MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
3. Leg raising	"The Forward Kicker" Start. pos. Standing erect. 1. Right foot raised forward. 2. Right foot normal. 3. Left foot raised forward. 4. Left foot normal.	8-12	Rhythm or at will
4. Trunk sideward - bending	"The Grand Liver Squeezer" Start. pos. Standing erect, feet apart, hands upward, fingers locked. 1. Trunk bent right. 2. Trunk bent left.	8-12	Rhythm or at will
5. Neck and chest	"The Rubber Neck" Start. pos. Standing erect. 1. Head turned right and pressed backward. 2. Head turned left and pressed backward.	8-12	Slow rhythm or at will
6. Trunk forward - bending	"Methuselah's Secret" Start. pos. Standing erect, feet apart, hands sideward. 1. Trunk bent forward, both hands touching right toe. 2. Trunk normal, hands sideward. 3. Trunk bent forward, both hands touching left toe. 4. Trunk normal, hands sideward.	8-12	Rhythm or at will

VII. AGE 46 (OLDER MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
7. Heavy leg	"The Stretch Bender" Start. pos. Standing erect. 1. Heels raised, hands sideward. 2. Knees fully bent, hands upward. 3. Knees normal (heels raised), hands sideward. 4. Heels normal, hands normal.	8-12	Rhythm or at will
8. Trunk lowering	"The Double Bow" Start. pos. Standing erect, feet apart, hands on hips. 1. Trunk half lowered. 2. Trunk normal. 3. Trunk lowered. 4. Trunk normal.	8-12	Rhythm or at will
9. Abdominal	"The Colon Squeezer" Start. pos. Back on floor. 1. Knees at chest. 2. Feet normal.	8-12	Rhythm or at will

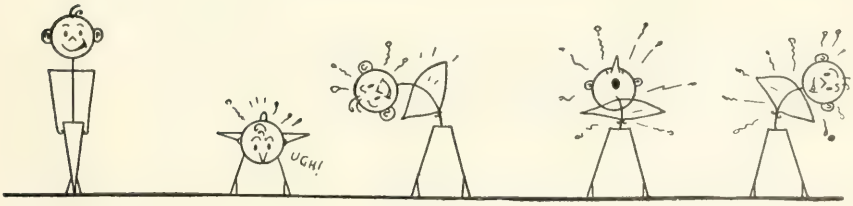


FIG. 140

10. Special	"The Roll Around" (Fig. 140) Start. pos. Standing erect, feet apart, hands on hips. 1. Trunk bent forward. 2. Trunk bent right. 3. Trunk bent backward. 4. Trunk bent left.	8-12	Rhythm or at will

VII. AGE 46 (OLDER MEN)—Continued

Type	*Exercise*	*Repeated*	*Method*
11. Stepping	"Double Straddle Jump" Start. pos. Standing erect. 1. Feet jumped apart. 2. Jump with feet apart. 3. Feet jumped together. 4. Jump with feet together.	30-40	Rhythm or at will
12. Breathing	"The Lung Pumper" Start. pos. Standing erect. 1. Hands at chest and inhale. 2. Hands normal and exhale.	6-8	Rhythm or at will

VIII. THE "ILLINI ELEVEN"

As pointed out in a previous chapter it seems desirable to teach college students one or two sets of exercises which they can use throughout life. (In view of the fact that a large number of secondary school students never enter college it is, perhaps, desirable to do this in the later years of the high school also.) We have experimented with this plan for the past three years at the University of Illinois and have found it to work very satisfactorily. A great number of alumni have written to us for copies of the drill. In addition we have received innumerable reports that students are doing the exercises late in the evening when they have become logy from study. Upper classmen have learned the exercises and do them mornings upon arising.

The "Illini Eleven" has been printed in the form of a folder which covers a description of the exercises, drawings of the exercises, methods of utilizing the exercises and eleven suggested health habits. These are distributed to the students. The "Illini Eleven" is taught in all freshman gymnasium classes, each time the classes meet for the entire year. Each student thus repeats the drill from sixty to sixty-five times during his freshman year. He is required to learn the exercises by their names and execute them in good form. The work is conducted by the "at will" method. Ordinarily it takes from ten to twelve minutes to complete the drill. The folder distributed to the students contains the following material:

(a) Suggestions for Performance

The "Illini Eleven" are designed for adults. They are scientifically sound and the product of years of study. Used daily they will increase your organic vigor, muscular strength, body suppleness, motor reaction and body posture.

Pin this folder on your bedroom wall and practice the exercises until you have learned the "Eleven" thoroughly.

Learn to do the exercises correctly, vigorously and in good posture. Don't cheat yourself.

In the beginning repeat each exercise the minimum number of times; then gradually increase the dosage.

Perform the exercises with enthusiasm. Count out loud; hum a snappy tune; grunt, puff and stamp about. Get the whole family in on the fun.

Go through the entire "Eleven" without stopping. The investment of ten or twelve minutes of your time in this way cannot help but pay big dividends.

(b) "Illini Eleven"

1. *The Stretcher* (min. 4—max. 10).
   Starting position. Standing erect.
   1. Hands on shoulder, right foot sideward (pull elbows down).
   2. Hands upward, rise on toes (stretch).
   3. Hands on shoulders, heels normal (pull elbows down).
   4. Hands normal, right foot normal. (Fig. 141.)

2. *The Twister* (min. 10—max. 15).
   Starting position. Seat on floor, hands on hips, feet wide apart (chest high).
   1. Trunk turned right, left hand on right toe (don't move feet).
   2. Trunk normal, left hand on hip (keep chest up).
   3. Trunk turned left, right hand on left toe (don't move feet).
   4. Trunk normal, right hand on hip (hold chest high). (Fig. 142.)

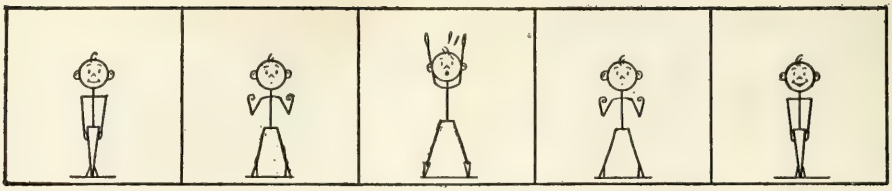


FIG. 141

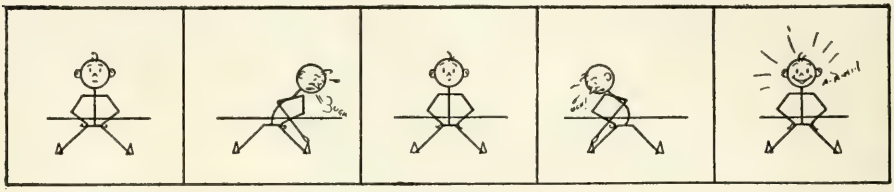


FIG. 142

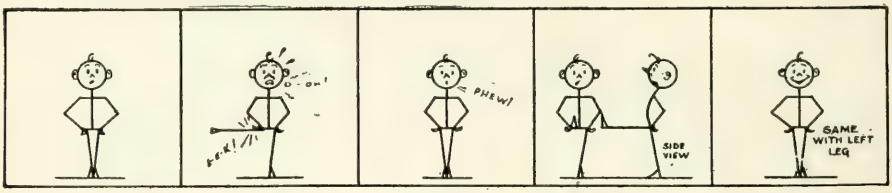


FIG. 143

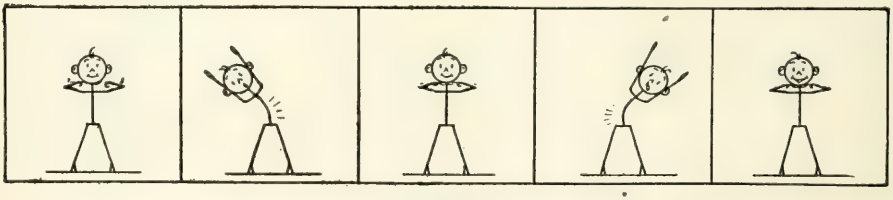


FIG. 144

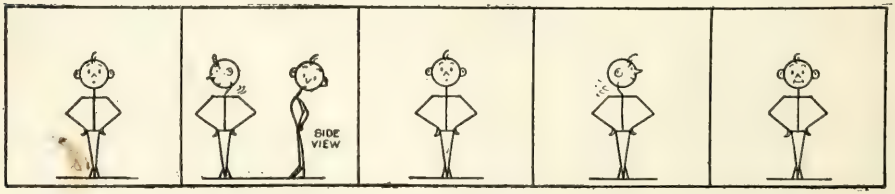


FIG. 145

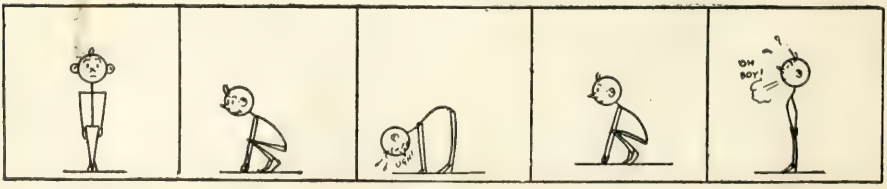


FIG. 146

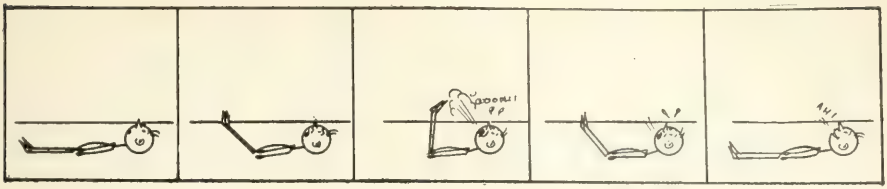


FIG. 147

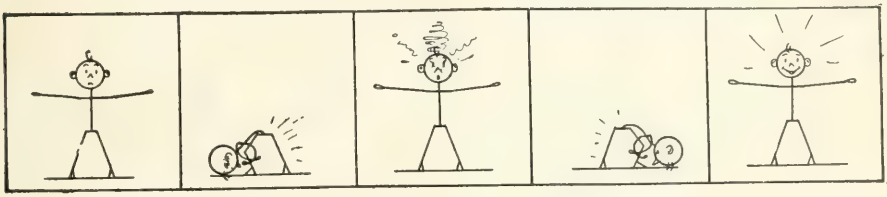


FIG. 148

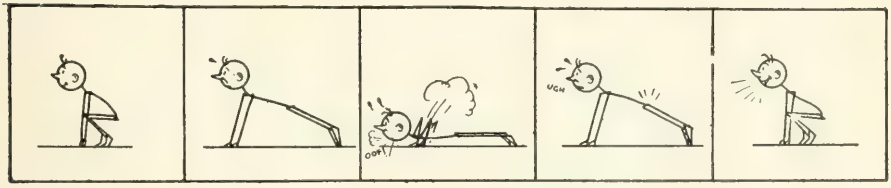


FIG. 149

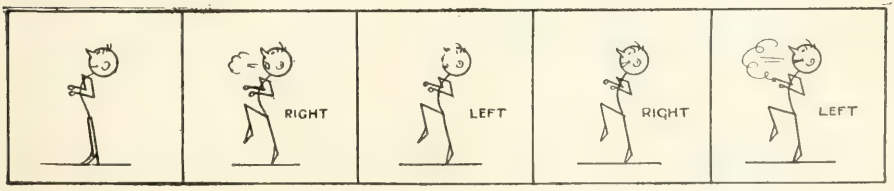


FIG. 150

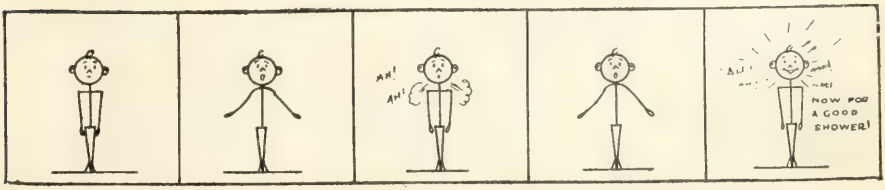


FIG. 151

3. *The Kicker* (min. 5—max. 8).
Starting position. Standing erect.
1. Right foot raised sideward (kick foot as high as possible).
2. Right foot normal.
3. Right foot raised forward (kick foot as high as possible).
4. Right foot normal.
5–8. Same with left foot. (Fig. 143.)

4. *The Side Bender* (min. 10—max. 15).
Starting position. Standing erect, feet straddle, hands on neck (elbows back).
1. Trunk bent right, hands upward (stretch).
2. Trunk normal, hands on neck (elbows back).
3. Trunk bent left, hands upward (stretch).
4. Trunk normal, hands on neck (elbows back). (Fig. 144.)

5. *The Neck Presser* (min. 10—max. 15).
Starting position. Standing erect hands on hips.
1. Head turned right and pressed backward (keep chin down, press backward).
2. Head normal (keep abdomen in).
3. Head turned left and pressed backward (keep chin down, press backward).
4. Head normal (don't slump). (Fig. 145.)

6. *The Squatter* (min. 10—max. 15).
Starting position. Standing erect.
1. Squat on floor (knees together, hands on floor near feet).
2. Knees normal (keep hands on floor).
3. Squat on floor (same as count one).
4. Stand erect. (Fig. 146.)

7. *The Leg Lifter* (min. 10—max. 15).
Starting position. Back on floor.
1. Feet half upward (knees straight, feet together).

2. Feet upward (keep hips on floor).
3. Feet half upward (same as count 1).
4. Feet on floor. (Fig. 147.)

8. *The Compressor* (min. 10—max. 15).
Starting position. Standing erect, feet apart, hands sideward.
1. Trunk bent forward (right knee bent slightly, arms wrapped about right knee, chest on right knee).
2. Trunk normal, arms sideward (buttocks tight).
3. Trunk bent forward (left knee bent slightly, arms wrapped about left knee, chest on left knee).
4. Trunk normal, arms sideward. (Fig. 148.)

9. *The Dipper* (min. 10—max. 15).
Starting position. Squat on floor (knees bent and together, hands on floor near feet).
1. Feet backward (body supported on hands and feet, elbows straight, trunk and legs straight and in line, feet together).
2. Elbows bent (body supported on hands and feet with elbows bent so trunk and legs parallel floor).
3. Elbows straight (same as count one).
4. Squat on floor (same as starting position). (Fig. 149.)

10. *The High Stepper* (min. 40 steps—max. 100 steps).
Starting position. Standing erect, hands at waist (fists clenched).
1. Run in place raising knees. (Raise arms and knees vigorously and lower feet lightly. Done properly there should be no jar.) (Fig. 150.)

11. *The Expander* (min. 5—max. 10).
1. Rotate hands outward and inhale (look up and hold momentarily).
2. Hands normal and exhale (don't droop). (Fig. 151.)

(c) "Illini Eleven" Health Habits

1. Execute the "Illini Eleven" daily.
2. Play some adult athletic game three times each week.
3. Spend one afternoon in the open each week.
4. Walk a brisk mile or two daily.
5. Breathe deeply several times daily.
6. Sleep with windows open eight hours daily.
7. Eat some fruit and coarse vegetables daily.
8. Chew all food well before swallowing it.
9. Drink two quarts of water daily.
10. Have a bowel movement once or twice daily.
11. Take a bath and vigorous rub daily.

and

Celebrate your birthday by having a health examination.

CHAPTER XI

TECHNIQUE OF TEACHING

Technique is a pertinent consideration in all problems of teaching. It is no less important in the teaching of calisthenics than in the teaching of any other subject. In fact, if the study of seventy representative drills made by the writer can be accepted as a fair indication of present-day teaching conditions, it is equally as important as the selection and organization of the subject matter. The individuality of instructors and the great differences in situations make the establishment of cut-and-dried rules, which can be universally applied, impossible. For this reason all that shall be attempted here will be a presentation of some of the fundamental principles involved in the art.

The processes normally incident to the conduct and management of a class in calisthenics may be divided into six general fields:

1. Class morale,
2. Opening and closing order,
3. Introducing exercises,
4. Carrying on exercises,
5. Stopping exercises,
6. Coaching the exercisers.

We can only get results from the calisthenic drill by having the exercisers work at the exercises; there are no benefits to be derived from opening and closing order, introducing exercises, coaching the exercisers, and so on. These activities are necessary, of course, but the period is not set aside for the execution of them; they are merely appurtenances, mechanical means essential to the proper conduct of the exercises. In view of this fact, the instructor should take great pains not to waste time on them; he should constantly strive to execute these acts as efficiently as possible. This is especially true in these days of crowded curriculums.

As the school program of physical education activities is organized at present the time set aside for calisthenics should be limited to ten or fifteen minutes. If the instructor, as seems to be the common practice, spends two minutes opening order, spends from a quarter to half a minute in describing and demonstrating

each exercise, spends two or three more in explaining faults, spends another in resting the class, and still another in getting them back to close order, there is not very much time left for the class to exercise. The session is little more than a sad waste of time.

I. CLASS MORALE

The great problem facing the instructor is how to get the most out of the class. In the past this procedure has been variously called class control, order, discipline, etc., but a better title than any of these, perhaps, is class morale. Class control, order, discipline and similar phrases implies control from without, the presence of superior authority, while class morale implies control from within. Class control demands attention, interest, etc.; class morale induces them. An instructor may have control, order, discipline, etc., and yet not have the best teaching conditions. The best teaching conditions exist when the class wants to do good work, has a deep respect for the teacher, approaches the work with enthusiasm and shows a distinct desire to coöperate with the authorized school officials. This predicates the development of a state of mind summed up in the word morale. Once secured, control, order and discipline cease to be problems; they automatically result. Class morale should be the ultimate objective of every instructor. It is doubtful if it can be gained in any absolute sense, for there are degrees of class morale as of everything else. The conscientious instructor, nevertheless, will strive to gain as much as possible.

Class morale cannot be secured by the asking. It is the product of a long, never-ending process of building up the proper state of mind; it is the ultimate objective, always striven for, but never quite reached. Strictly speaking, it is the product of good leadership, or the instructor's ability to handle the class. To secure and hold this leadership is one of the problems which the instructor must face and resettle constantly.

In brief form, the situation which is known as teaching may be summed up something as follows: It is a tendency for social groups to set up and follow leaders. The calisthenic class is a group, but in this case the leader (teacher) is furnished by the authorities. The class at a very early date subconsciously challenges this leadership; the teacher must prove his right to his office. If he does, all well and good, but if he fails to measure up, if he is found wanting

in the qualities which make for leadership, he immediately loses what prestige he carried with his vested office. By virtue of his official position he will be accepted and tolerated, but he can no longer hold the influence and power which only goes with true leadership ability. Even after the right of leadership seems to have been settled and recognized he is challenged again and again and if he falls short he will gradually lose standing with the class and his work will inevitably decline in good results.

Exactly what constitutes good leadership and class morale is a difficult question to answer. It involves everything connected with the teaching situation; the personality of the teacher, his understanding of human nature, his ability to create situations most favorable to the work, his ability to adjust himself to situations, his ability to appeal to various instincts, his ability to organize and manage, his ability to apply the principles underlying the work correctly, his ability to "feel the class pulse," the nature, sex and age of the class, the weather, the temperature and humidity, and a score of other factors. The number is almost without end. Even if it were possible to list and analyze them all, which is doubtful, it would be futile. The present stage of development in this work does not warrant such a step. For the purpose of giving the beginning teacher some foundation stones upon which he can build, however, a few of these factors will be listed and discussed.

Factors Influencing Class Morale

1. *Interest.* Interest is perhaps a bigger item in class morale than any other single factor. When this is lacking, and too often it is, the work of the class is desultory and fruitless, and if this condition is continued for any length of time, absence of class morale invariably results. It is human nature to apply ourselves according to the depth and seriousness of our interests. The teacher of calisthenics should do everything in his power to secure and hold the interest of the class in this work.

The underlying principle in securing the interest of the class is that of acquainting the class with the significance of the work. When the pupils have an understanding of the work, or, as they put it, know what it is all about, they are bound to take a keener liking for it than if it is nothing more than a lot of dead exercises which they execute because the instructor demands it.

The live instructor has several ways for gaining and retaining the student's interest. There are, of course, a few students who will not become interested in this subject (this is true of all subjects), but this should not deter the instructor in his effort. During the preliminary physical examination much can be accomplished by pointing out to each his individual shortcomings and the necessity for careful application and serious effort in the class work. An occasional short discussion during class hours of four or five minutes' duration on the value and significance of physical education or some phase of it is quite worth while. Conversation with the students outside of class offers another opportunity. Posters, pictures, folders, placards and other devices also may be used.

2. *Incentives.* Some teachers control largely by "exercising their authority," by virtue of the awe or fear they inspire, by constantly holding the whip of compulsion over their pupils. This form of appeal is the lowest and should never be resorted to, except once in a while in the case of refractory individuals, after all other means have failed. It is the wrong kind of discipline, "discipline from above" demanding abject obedience and creating a most undesirable mental atmosphere. Other teachers control their classes through the respect and affection they are able to inspire, by imbuing their pupils with a desire to do their best in order to please the teacher and gain his approbation. Others control because they are able to arouse the sense of duty in their pupils, inducing them to try to do the work well because it is worth doing, or simply because it is a part of their obligation to the institution. Others control by appealing to intelligent self-interest, to a commendable desire to derive the greatest possible benefit from the work. And there are still others who control chiefly by communicating to their pupils their own enthusiasm and interest in the work and making it truly enjoyable for its own sake. All these avenues of appeal, excepting the first, are useful and legitimate means of maintaining control. The most successful teachers are those who know how to play upon these different motives and incentives of the class most skillfully, in the right proportion and at the proper time.

3. *Instructor's Attitude.* The instructor's attitude is highly important in the matter of securing and maintaining a state of good

morale. The primary task is to create the impression that good order and good work is the accepted condition, that coöperation and good behavior are taken for granted. Much can be done in this direction by the instructor's actions and demeanor while carrying on his work. A quiet, business-like manner, a firm, vigorous voice, a spirit of helpfulness, erect carriage, a positive determined state of mind, an impression of plenty in reserve, a show of surprise and disappointment, even hurt, at small breaches of discipline and a thorough mastery of the subject being taught, all tend to set up the proper atmosphere. All these can and should be cultivated by the instructor who seeks the best results from this work. This attitude is essential throughout the conduct of the entire class, but it is especially important in the beginning. "The instructor should be a leader, not a policeman."

4. *Instructor's Preparation.* The instructor's knowledge of his subject is reflected in his classes' work. The poorly equipped, hesitant instructor is soon found out by the class and loss of influence and control immediately results. The confident, exact instructor who, as the students say, knows his stuff, is immediately accepted as the natural leader and may become the idol of the class. Admiration of this sort makes for the very best of teaching conditions. Knowledge of the subject is purely a matter of application on the part of the instructor and can be gained by any one. The instructor who is desirous of making his classwork count for the most should not neglect this.

5. *Commendation.* There is a certain type of physical training instructor who thinks that it is his duty to constantly reprove his classes. It may go back to the old military attitude that presupposes good work and only comments on bad work. This, however, is bad psychology. Human nature craves commendation and applause. To tell a class that they are doing well (when they are) leads to better work. Too much reproof leads to the attitude of, "Oh, what's the use of trying," while a little encouragement, when it is deserving, is exceedingly stimulating. If the members of a class are "proud of their class," "glad to be in that class," feel that their's is the "best class in school," the problem of class morale is largely decided. An instructor can help in this by creating the

impression that he is extremely well pleased with the class himself. This idea may be conveyed by a direct statement to the class, by his own attitude, by implication, by confidential statements to individual members of the class, which invariably pass around, and in a host of other ways.

I have made a number of experiments in this direction and all have been uniformly successful. Just recently one was made which, in results, far exceeded expectations. Of eight classes in physical education at the University of Illinois devoting part of their time to calisthenics, one class was doing slightly better work than the others. One day after this class had done especially good work I informed them that the calisthenic work in that class was better than in any of the other classes. What was the result? For the remainder of the season the calisthenic work of this class was immeasurably improved over what it had been before. But here was the surprising result; the informal work also was greatly improved. Prior to making the announcement this had been no better than that of the other classes. Class pride exerted its influence in everything the class attempted.

6. *Reproof.* If a whole class shows a spirit of mischief or antagonism to a new teacher, he can, in most cases, conquer it by a fearless and apparently unconcerned manner on noting the first signs; than, perhaps, by reprimanding one or two in a quiet tone, but with a look and manner conveying the impression of unlimited reserve power, of perfect understanding of the situation and ability to deal with it. In the meanwhile he may decide in his own mind what to do in case of further trouble; then, if it seems unavoidable, make the issue in a few well-chosen words, and "land hard" on the first offenders, using whatever legitimate means he has at his command. If possible, meet the issue smilingly, but in any case with firmness and determination. Above all, give no sign of being disconcerted or irritated, as that is exactly what a mischievous class desires.

When a class finds that a teacher is fearless and courageous, seems to know his business and to understand the mental workings of the group and of every individual in it, it soon settles down to a business-like attitude. When two or more individuals habitually incite each other to mischief or inattention, separation may be all

that is necessary. Occasionally situations develop which are downright exasperating. Under these circumstances the instructor should be exceedingly careful to keep himself in control. Reproof and punishment should be administered with no show of personal animosity. While a show of righteous indignation or even wrath may, on rare occasions, be justifiable and very effective, it is safest to avoid any explosive reaction; violent collision with individuals or class should be side-stepped if possible.

7. *Avoid Being Easy.* While it is exceedingly important to avoid being "hard," it is equally important to avoid being "easy." The instructor who lets individuals or the class "put things over on him" or "get away" with little things will soon have his hands full straightening out a continued succession of bad situations. The average individual has no respect for the "easy" instructor, and without respect from the class the value of the instruction becomes considerably depreciated.

8. *Teacher's Responsibility.* The state of the class is entirely the teacher's responsibility. If they are working well, the credit is his; if they are working poorly, the discredit is likewise his. Too many teachers pat themselves on the back when things are going smoothly and blame the class when they are not. This is the height of conceit. When the class is listless, or the work is progressing raggedly, the instructor should check up on his own management. Incorrect instructions, lack of clearness, lack of vigor, lack of enthusiasm, or any one of a score of similar items might be the cause of the disorder or poor work of the class. The work of the class is a pretty accurate indication of the instructor's ability to manage and teach. It mirrors his own attitude and talent exactly.

Occasionally conditions exist which seem almost hopeless. In April or May the entire class may be afflicted with "Spring fever"; before or after a particularly momentous occasion in school life—a football game, carnival, etc.—the class mind may be on other matters. At these times there are but two courses for the instructor to pursue: one is to redouble his efforts, calling into play all the strategy and technique he can muster, in other words, fight the class mind with his own wits; the other is to throw all matters of discipline and control to one side and, figuratively speaking, "give

the class a holiday." Under expert teaching either may be successful. Whichever method is used, however, should be applied only once; the next time the class meets the instructor should make it clear that the old routine is in order and it is time to get back to work again.

9. *Teacher's Personal Conduct.* Too many teachers of physical education counteract everything they say by what they do. To get real results, the physical instructor must be most meticulous in his own personal habits, both at work and at leisure. I have seen instructors yell out posture cues and even offer reproof to classes for not assuming good positions while they themselves were horribly stooped and bent. To do this one must be a disbeliever, lazy or indifferent. The real instructor will hold a good bearing on the floor, in his office and on the street. Likewise, the instructor's clothing should be spotlessly clean. It is futile to expect the members of the class to launder their uniforms when you yourself neglect it. To get the highest respect of the pupils, which, after all, should be the goal of every instructor, the teacher's life in every respect should be clean and above reproach.

10. *The First Day.* The attitude and work of a class for the entire season is tremendously influenced by the instructor's conduct the first day or first few days the class meets. At this time, far more than later, the class is amenable to suggestion and may be readily and conveniently molded into a desirable form. The classroom is new, the teacher is new, the class may be new, all in all conditions are somewhat strange and unsettled to the pupils. The impression created at this time is definite and lasting.

I have personally experimented in all directions with the problem of class morale and have decided beyond question of doubt that the best course to follow is to be particularly exact, businesslike and severe the first few times a class is met, and then gradually ease up on disciplinary measures until the proper cord has been struck. The opposite course of being "free and easy" at first and then tightening the lines as the season progresses is much more difficult and fraught with disaster. "It is less difficult to be easy after having been hard than it is to be hard after having been easy."

11. *Start Each Section Right.* The first minute of the class is all-important in determining the attitude and type of work that will be carried on each day. There are a few simple mechanical procedures that are very helpful here.

In the first place, start every class on time. Calling the class into formation on time one day, five minutes late the next, ten mnutes late the next day, and so on, leads to tardiness, which always causes confusion and additional labor. Set a time to start and stick to it. Do not tolerate tardiness. Set a penalty for tardiness and see to it that those who receive them get their full benefit. Some instructors follow the practice of starting all classes late in order to have tardy members present when the work begins. This is a bad practice from every point of view. In the first place, the time set aside for the period is too short and too valuable to waste this way. In the second place it tends to develop the ideal of tardiness in the pupils. And lastly it makes for shiftless teaching.

Use a whistle, bell or gong as a signal to call the class into formation. These devices penetrate the bedlam that usually exists far more effectively than any vocal effort and has an element of decisiveness that produces good results. I have heard instructors call "fall in" a half dozen times before getting a full response. This is a bad start. Have it understood from the first that as soon as the bell rings every one is to run to his place in line and stand "At ease." Laggards should not be tolerated.

When the class is in formation, glance up and down the line and then firmly and vigorously call, "Class—At tension." Pause. If the response has not been satisfactory call, "At ease," and then, after a meaningful pause or a word to the effect that a better response is desired, call attention again. When unified response has been secured, proceed with the work. The main thing, during this particular part of the session, is to create the impression of energy, efficiency and business.

12. *Gain Control First—Teach Afterwards!* It is the height of folly to attempt to teach without the entire class attending to the instruction. Class response is entirely dependent on this. Never talk to a class until absolute silence and order prevail. Directions and suggestions which are made to part of the class only must be repeated for those who did not hear. This is bad for class morale

in addition to being inefficient. Establish the habit of talking to all or none.

13. *Make Explanations Clear.* In making explanations to the class great care should be exercised in talking as clearly and concisely as possible. Uniformity and exactness of response cannot be expected unless there is uniformity and clearness of understanding. Practice talking in short terms and phrases that lead directly to the point.

14. *Avoid Wordiness.* On the other hand, avoid talking too much. This is a very common fault with all teachers. A gymnasium class is not an entertainment and should not be carried on as such. Leave the monologues for the stage, sermons for the pulpit and addresses for the platform. In the gymnasium cut the talk down to the minimum and keep class action at a maximum. It is better to make two or three short, separate explanations than to make one long detailed discourse.

15. *Attempt One Thing at a Time.* It is far more effective to drive home the various features of the work one by one than to attempt to jam everything over at once. The latter method befuddles and discourages the student; the former method breeds confidence and encouragement. New teachers, for instance, in giving posture cues frequently call, "Feet together, knees straight, hips level," etc., reciting a complete category of the factors involved in securing the proper standing position. As far as improving conditions are concerned they might as well repeat the ten commandments. "Head up," "Chest up," or any other single command is far more effective.

16. *Unified Class Action.* The instructor should use every means that he can devise to get the exercisers working together. Working in a perfect rhythm not only has a stimulating effect on the individual, but makes for order and class morale. Any time that a class is performing an exercise out of unison, stop and restart it. This is far more effective than trying to get order out of chaos by a stream of commands and exhortations while the class continues to exercise. If a class is allowed to continue an exercise in bad

order it is liable to create ideas and habits of work that will eventually become disasterous. Especially difficult exercises may have to be stopped and restarted three or four times.

17. *Insist on Good Performance.* One of the great faults with physical education teaching is that of carelessness or indifference on the part of the teacher toward the grade of work done by the students. Too often "going through the form of the activity" is all that is required. Frequently we have students entering the university after four years' physical education in the high school (work presumed to be physical education, at least) who present no material evidence of ever having been inside a gymnasium. A large part of this is due to the slovenly work done in the lower schools. (The colleges and universities are not exempt on this score, of course; the condition cited above is merely evidence in the discussion at point.)

In calisthenic teaching, especially, the instructor should bend every effort to securing accurate, vigorous, high-grade performance on the part of the exercisers. The results obtained from this work may well be measured in terms of these qualities. The instructor should be in full sympathy with the idea that "what is worth doing at all is worth doing well." Tact, patience, constant vigilance, study of methods, checking-up on results, class discussion, and so on, everything included in the technique of teaching are necessary to put this across, but it is eminently worth while. Perhaps the surest test of an instructor's teaching power is the quality of daily class performance.

If there are leaders in the class or any particularly apt pupils available, backward pupils of this sort may be taken out of the class and to one side and here, working under the direction of one of the abler students who has been assigned to the task, they may be given some special coaching.

19. *Admit Mistakes.* Being human, the calisthenics teacher, like every one else, makes mistakes. There is no disgrace connected with making them. Incorrect explanations and instructions made to the class should be readily admitted. This not only helps set things right but gains the respect of the class. The quickest way to accomplish this is to merely state, "My error," or, "My mistake," and then immediately make the necessary correction.

While it may seem unbelievable it is nevertheless true that a great number of instructors are prone to blame the class for mistakes which are their own. These are commonly the products of poor management. Such tactics represent the heights of bullyism. They cannot be endorsed.

20. *Check Horseplay.* It is easy to stop a leak but hard to stop a deluge. Even in the best of classes there is an occasional show of horseplay. Some caper-cutting member will slyly "poke" another member; the second member may return the favor or mayhap pass it on to a third. If this is allowed to continue it may soon envelop the entire class, which, under the conditions, may become practically unmanageable. Harsh measures may have to be used, friendships strained and ill-feeling aroused; all in all, this is a very undesirable situation. All can be avoided by checking the first outbreak.

21. *Regulation Uniform.* A regulation uniform is another factor of considerable importance in the matter of class morale. A conglomeration of uniforms, including red, blue, green and white shirts, brown, white and blue pants, and varicolored stockings, makes a very sketchy appearance. It makes for anything but class pride. On the other hand, a regulation uniform builds class pride. The instructor should introduce a regulation uniform and absolutely insist on its use. Make the uniform necessary to attendance.

22. *Personal Cleanliness.* The instructor should insist on both cleanliness of dress and cleanliness of person. In the first place it is detrimental to class morale to permit dirty individuals to participate in the classwork and in the second place it is a primary function of the instructor to teach the habit of cleanliness. Besides, sweat-soaked uniforms frequently give off disgusting odors, saturating both the locker room and the gymnasium in an undesirable manner. An occasional inspection will help clear up these unsanitary conditions.

23. *Exercise Area Clean and Orderly.* The place of meeting, whether it be the gymnasium, playground, classroom or a roof, should be as neat and clean as it can be made. Surroundings have

a decided influence on the individual's attitude and work. If dirt and disorder predominate, the individual is apt to be careless and lax; if neatness and order prevail, there will be distinct personal tendencies in the other direction. The paint brush, broom and mop are positive assets in the matter of morale.

24. *Work Outdoors.* Whenever possible the work should be carried out of doors. Too many instructors are wedded to the gymnasium. The gymnasium is usually convenient and handy to the lockers, offices, equipment and showers, and it takes a little will-power to move the classes outside. Nevertheless, the transfer is quite worth the effort. Sunshine and fresh air are the best tonics in the world, and if our work is to produce the fullest measure of results, we should use them. After working indoors the average class acts a little frisky the first two or three times they are taken out, but this is due largely to the strangeness of the situation and soon wears off. Due to the exhilarating effect of outdoor conditions, outdoor classes are never quite as manageable as indoor classes, but this must be accepted. The increased benefits more than recompense for the slight loss of control. Sweat shirts and sweat pants serve splendidly as protection against the cold. When the class has to work indoors care should be taken that temperature, humidity and ventilation are right.

II. OPENING AND CLOSING ORDER

At the beginning of the physical training session, unless the work is conducted in the schoolroom, the class is usually assembled in a single line along one side of the gymnasium or exercising field —this is called close order. The range of movement of an individual taking part in a calisthenic drill is so great that a class cannot work in this formation, it must be spread apart for exercising— this is called open order. To work most effectively each exerciser should have at least a six-foot clearance in all directions. At the close of the calisthenic work the class is usually placed back in its original line formation.

A great number of methods are used to put the class in open and closed formation, but they are for the most part variations of a few distinct methods. The principal methods for executing these maneuvers are hereinafter outlined. In view of the fact that the

maneuver used for closing from a given formation is usually the reverse of the method used for opening the formation, the two will be outlined together.

(a) Methods Used

Method No. 1. To use this method it is necessary to have spots painted on the floor. Spots for this purpose should be arranged in an orderly way between six and eight feet apart. To place the class in open formation the instructor merely calls, "Spots," or sounds a gong. On this command each member of the class runs and stands at attention on any available spot. If there are many more spots than members in the class, before calling "Spots" (or sounding the gong) the instructor designates the general neighborhood of spots which are to be covered. The first time this method is used it may be necessary to indicate the direction which the exercisers should face on taking the spots; afterwards this will be understood. In some cases the instructor assigns each individual to a definite spot which is used for the entire season. (Dia. 1.)

DIAGRAM 1

ARRANGEMENT OF SPOTS ON FLOOR

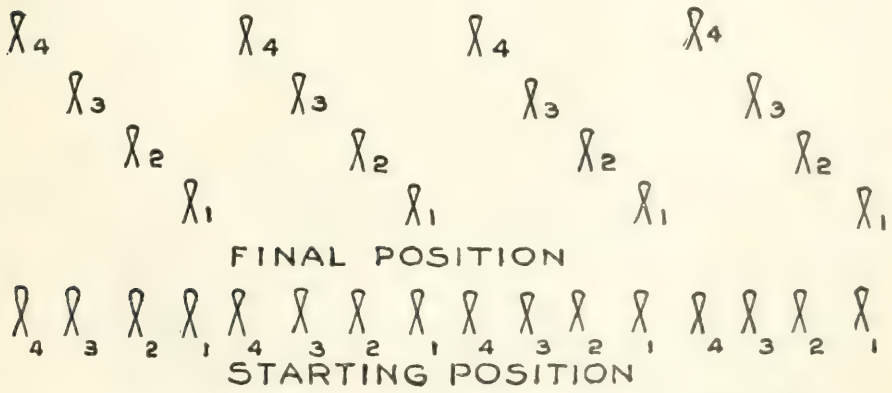
To put the class back in the original line formation the instructor calls, "Fall out and fall in line." On this command each member runs for his position in the original line where the position of "At tension" is assumed.

Method No. 2. The instructor commands the class, "Count off by fours." When this is completed he commands, "Take twice as many steps as your number. Ones take two steps; twos, four; threes, six; and fours, eight. Open ranks—March." On the command "March" the entire class marches forward, each member takes the stipulated number of steps and halts.

Instead of having the class take steps as outlined above some instructors have, "Ones stand still; twos take two steps; threes four; and fours, six." Rarely, an instructor does it this way, "Ones take four steps backward; twos stand still; threes take two steps forward; fours take four steps forward." And again, some instructors have the class count off by threes, or fives, or sixes, or eights. In any case the general scheme remains the same.

To place the class back in its original formation the instructor commands, "About Face." When this has been executed he commands, "Close Ranks—March," upon which all march back to the original line and halt. "About face," puts the class facing in its original direction. (Dia. 2.)

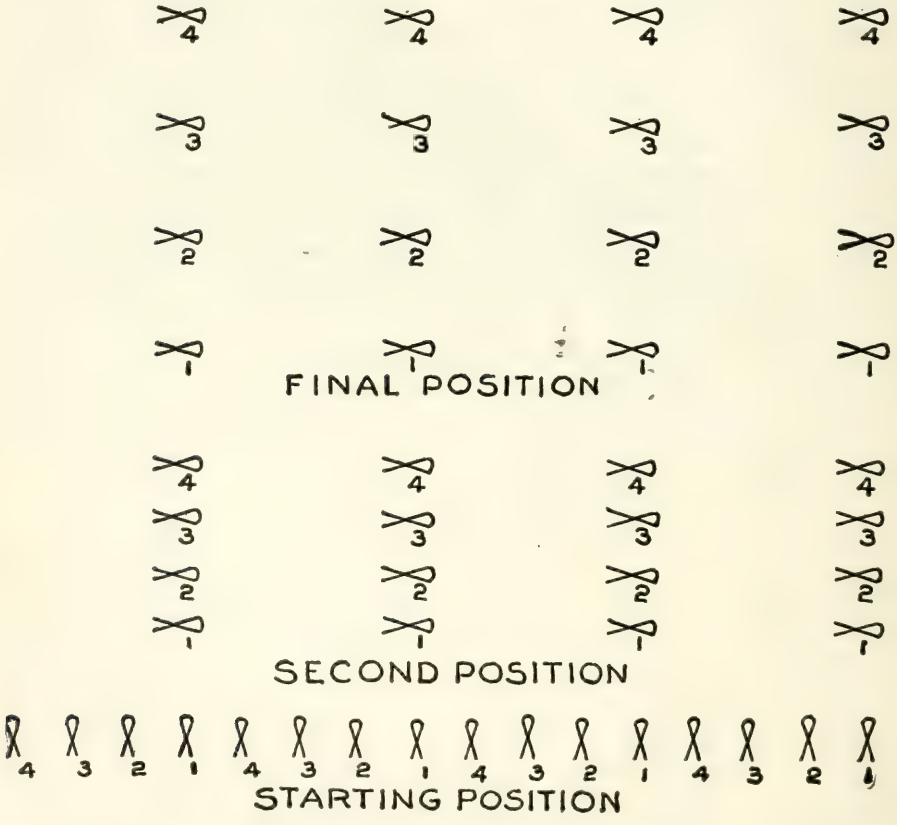
DIAGRAM 2



Method No. 3. The instructor commands the class, "Count off by fours." On the completion of this he commands, "Fours right—

March." When this is completed he commands, "Ones stand fast, twos, threes and fours give way to the left. Raise the arms sideward and take intervals at arm's length. Open ranks—March." On the command "March" all do as directed. When all have reached the proper interval and have halted the instructor commands, "Hands normal—Place." In moving to the left each individual moves independently, walking sideward. (Dia. 3.)

DIAGRAM 3



This maneuver may also be executed by executing a, "Fours left," movement and extending to the right. It is also used by having the members count off by threes, fives, sixes and eights. In any case the general scheme remains the same.

To close ranks from this formation the instructor commands, "Close ranks to the right—March." In executing this the mem-

bers constituting each set of four walk sideward to the right until all have reached a normal interval when all halt. "About face," "Fours left—March," and, "About face," given successively, places the class in its original formation.

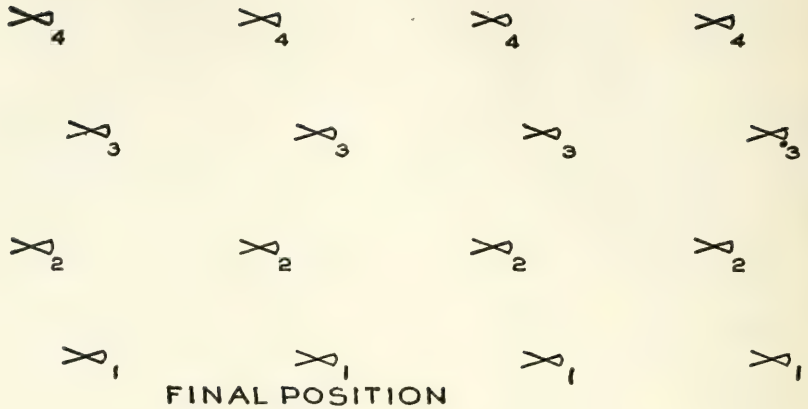
Method No. 4. The instructor commands the class, "Count off by fours." When this is completed he commands, "Fours right—March." When this movement is completed (having started from a halt they should finish at a halt) he commands; "Fours take six left steps; three, four left steps; twos, two left steps; and ones stand still. Fours step off on March, threes on count of four and twos on count eight. All halt on count twelve. Open ranks—March;" the instructor starts counting, "One, two, three," and so on. Each member of the class does as directed. Upon completing this the instructor commands, "Ones and threes (or twos and fours) one step forward—March." On the command "March" the members directed execute the order. (Dia. 4.)

This maneuver may also be executed in the opposite direction. Not infrequently an instructor will be found who has the class count off by fives or sixes or eights. This necessitates subsequent changes from the above outline which are quite evident.

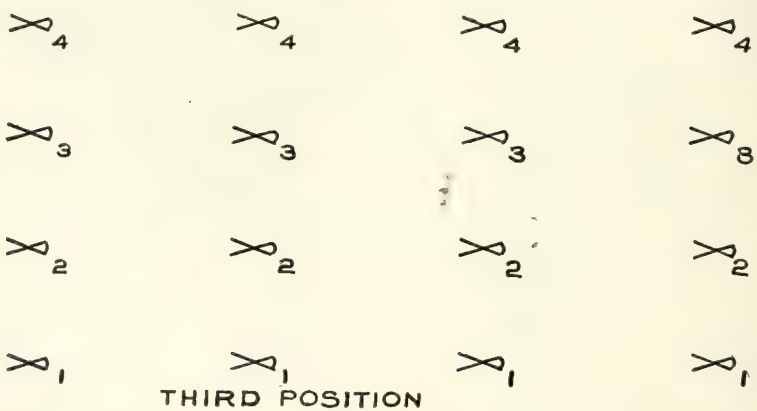
To close order from this formation the instructor commands, "Ones and threes (or twos and fours) two steps backward—March." When this has been executed he directs, "Close ranks to the right—March." This is done by sidestepping to the right. Upon its completion the commands, "About face," then, "Fours left—March," and then, "About face," puts the class in its original position.

Method No. 5. The instructor commands the class, "Count off by fours." When this is completed he commands, "Fours right and forward—March." Then in turn, "Column left—March," at the corner, and, "Column left—March," again in the center of the floor. This puts the column marching down the center of the gymnasium. When the column has advanced a short distance the instructor commands, "Raise the hands sideward; ones and twos give way to the right, threes and fours give way to the left; take arms length intervals. Open ranks—March." On the command "March" all, by marching in an oblique direction, do as directed,

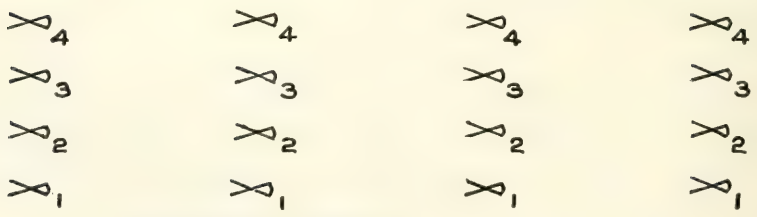
DIAGRAM 4



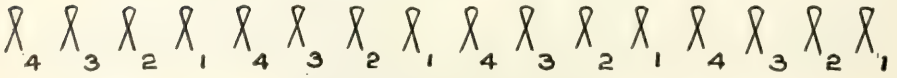
FINAL POSITION



THIRD POSITION

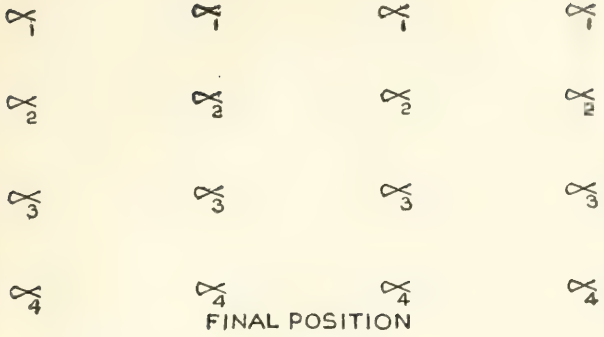


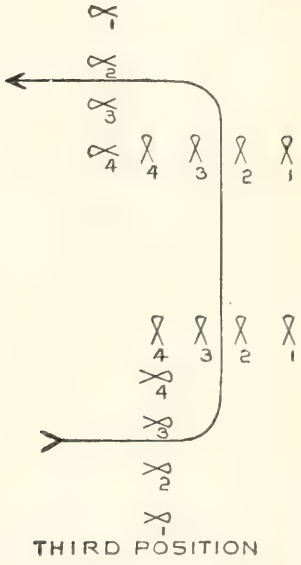
SECOND POSITIO'

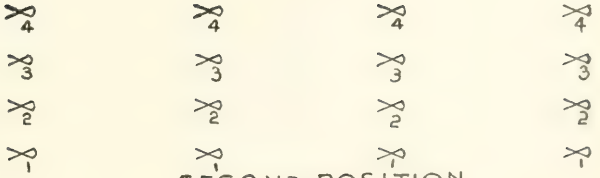


STARTING POSITION

DIAGRAM 5


FINAL POSITION


THIRD POSITION


SECOND POSITION

STARTING POSITION

When all have reached the proper interval the instructor commands, "Hands normal and—Halt," or, "Mark time—March," and then, "Hands normal and—Halt." (Dia. 5.)

This method is used with equal effectiveness by having the class count off by threes, fives, sixes, or eights. When squads of these sizes are used subsequent changes which are self-evident must be introduced.

To close ranks from this formation the instructor calls, "About face," and then, "Forward—close ranks—March." The entire class marches forward, at the same time obliquing in toward the center. When each set of fours has reached its normal closed position they march forward. At the end of the gymnasium the instructor directs, "Columns right by file—March." At the corner he directs, "Column right—March," and when the column has reached its original position, "Class—Halt." "Right Face," turns the class in the proper direction.

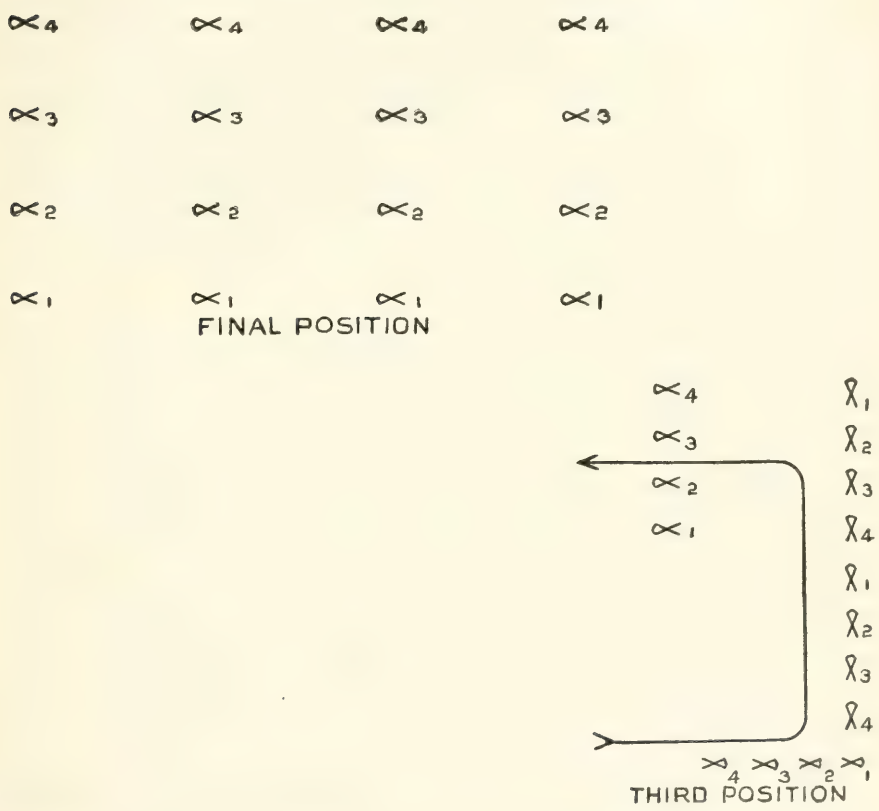
Method No. 6. This method is a simplification of method No. 5. The instructor says, "Right—Face," and then, "Forward—March." As the head of the column reaches the corner he commands, "Column left—March," and as the head of the column passes the center of the floor he says, "Column left by fours—March." From this point the class is handled as outlined in Method No. 5. (Dia. 6.)

To close ranks from this formation the instructor calls, "About-Face," and then, "Forward, close ranks—March." The entire class marches forward at the same time obliquing in toward the center. When each set of fours has reached its normal closed position they march forward. At the end of the gymnasium the instructor commands, "Column right—March." At the corner, "Column right—March," again. When the column has arrived at the point of the original formation the instructor directs, "Fours left—March," and when this has been completed, "Class—Halt." "About—Face," puts the class facing the original direction.

Method No. 7. To use this method the instructor first puts the class in a column of fours in the center of the gymnasium. This may be done by having them march around the end and down the center in a column of fours or by having them march straight to

the front and then execute a fours left or right. The latter method is the faster. In either case they are halted in the center. When the class has reached this position the instructor commands, "Ones

DIAGRAM 6



and fours take four side steps outward; twos and threes take two side steps outward. Ones and fours step off on the command March; twos and threes step off on count four. All halt on count eight. Open ranks—March." On the command march all do as

directed; the instructor counts. When this is completed the instructor commands, "Ones and threes (or twos and fours) one step forward—March." The numbers called do as directed.

Squads of three, five, six and eight are also used for the execution of this maneuver. Under these conditions slightly different directions for opening ranks are introduced.

To place the class back on its original line formation the instructor commands, "Ones and threes (or twos and fours) two steps backward—March." When this has been executed he commands, "Close ranks to the center—March," upon which all side step toward the center until the normal intervals have been gained. Those on the left side step right. Those on the right side step left. The class is then marched back to its original position by the route it came out.

Method No. 8. To use this method the instructor first puts the class in a halted column of fours in the center of the gymnasium. This may be accomplished by marching the class around the end of the gymnasium and down the center of the floor in fours or by marching the class forward to the center in line formation and then having them execute a fours right. Once in this position the instructor commands, "Raise the hands sidewards; ones and twos give way to the right; threes and fours give way to the left; take intervals at arm's length. Open ranks—March." On the command "March" all do as directed, walking sideward. On reaching their proper place all halt. The instructor then commands, "Hands normal—Place."

Squads of three, five, six, and eight, representing different formations for this maneuver, are handled with equal facility. In these conditions, though, slightly different directions must be given.

To place the class back in its original line formation the instructor commands, "Close ranks toward the center—March," upon which all walk sideward toward the center. When they have gained normal intervals they halt. The instructor then marches the class back to its original line formation.

(b) Relative Efficiency of Methods

The question now arises, which of these methods should be used. Complexity, time and local conditions must be considered in making

our choice. From the standpoint of complexity methods number one, two, and three are by far the simplest. They are very easy to teach and very easy to execute. Methods number five, six, seven, and eight are slightly more complicated. Method number four is the most complicated of all.

The time factor is also very important. For the purpose of determining the amount of time required to open and close order by each method a study was carried on with a class of fifty college students. In each case, excepting method number one, the class was required to count off by fours within the time taken. This must be done in all cases but the first so it must be considered in our results. The results were as follows:

Method	*Time taken to open ranks*	*Time taken to close ranks*	*Total time*
1	9 sec.	7 sec.	16 sec.
2	28 sec.	9 sec.	37 sec.
3	36 sec.	14 sec.	50 sec.
4	49 sec.	22 sec.	71 sec.
5	52 sec.	28 sec.	80 sec.
6	57 sec.	34 sec.	91 sec.
7	47 sec.	25 sec.	72 sec.
8	54 sec.	25 sec.	79 sec.

It will be seen from these records that methods number one, two and three are also the most rapid. These facts should influence an instructor in selecting the method to be used. Under ordinary circumstances method number two will be found to be most satisfactory. Whichever method is used the main point is that it should be executed as expeditiously as possible.

(c) Teaching Suggestions

It is better to use the same method throughout an entire season. There is no benefit or sense in changing the method, as some instructors do, every few days. New methods consume much more time than those which are old and familiar and this time might be better used in the practice of other activities of more significance and benefit. In most cases, too, after the class has learned to execute one method thoroughly a lot of the directions may be dispensed with and, "Open ranks—March," will be found sufficient to secure

an effective execution of the maneuver. This is merely another step in expediting class management.

In opening order and closing order, the instructor should secure absolute quiet and attention. He should speak clearly and concisely, if necessary repeat the order, and then after a short pause give the signal for execution. If a class executes the movement poorly they should be commanded, "As you were," upon which all immediately return to the original postion. After a full explanation the movement should be attempted again. This should be done to prevent a class from getting the idea and habit of performing poorly.

After a class has been put in open formation it may be faced in any direction by the simple expedient of giving them, "Right—Face," "Left—Face," or, "About—Face." Likewise, if the class is improperly stationed on the floor, it may be marched forward, backward or sideward to the desired position.

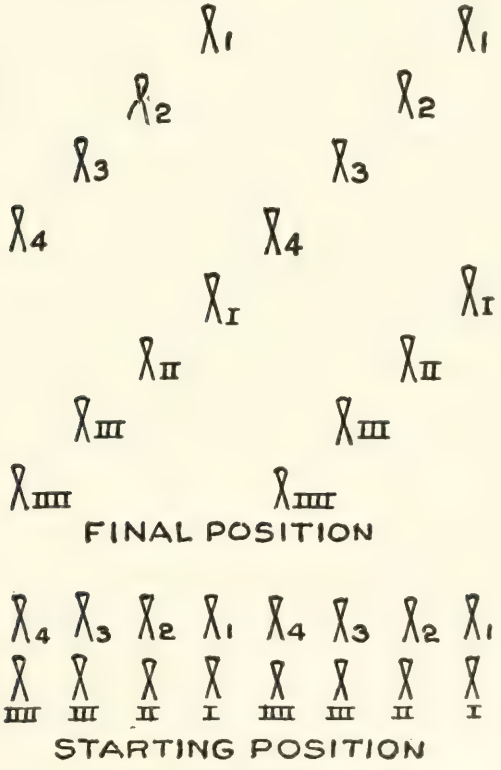
(d) Double Line Formation

Occasionally a class will be organized in double line formation. When a class is arranged in this fashion the instructor may open ranks by doubling-up on some of the above procedures. This may be done by first giving the command, "Front rank ten steps forward—March." When this is completed he may have the class open by using methods number two, three, or four, both ranks working simultaneously. Method number two is the most satisfactory. Whichever method is used the instructor merely reverses the process to place the class back in the original double line formation.

The following method is the standard army procedure for executing this maneuver. The instructor has the class, "Count off by fours." The rear rank men take the same number as the front rank men. When this has been completed he commands, "On the command March number one of the front ranks marches forward, and thereafter in order, two, three and four of the front rank, and one, two, three and four of the rear rank marches forward, each number stepping off successively on the even counts. Open ranks—March." The instructor immediately begins to count. When all are marching forward he calls, "Class—Halt," upon which the class stops on two counts.

To place the class back in line he commands, "About—Face." Then he directs them to "Close ranks—March." On this command number four of the rear rank stands fast. The other members of the class march forward to their respective places and halt. When all have halted the instructor commands, "About-Face," and the original formation is secured. (Dia. 7.)

DIAGRAM 7



III. INTRODUCING EXERCISES

After the class has been put in open formation the immediate problem facing the instructor is that of introducing the exercises. There are two general methods for doing this—the description method and the demonstration method—yet in actual practice a great many variations and combinations are used. The most com-

mon and practical of these are discussed in the following paragraphs.

(a) Description Method

The description method is used in four main ways to cover four distinct procedures. These are called:

1. The imitation method
2. The command method
3. The complete command method
4. The naming method.

1. *Imitation Method.* Exercises are, for the most part, made up of two or four positions taken in a certain prescribed succession. To teach an exercise by the description method the exercisers must first learn the positions. The method used for teaching this nomenclature is called the imitation method.

The procedure used here is as follows: For our illustration we will assume that the exercise "Hands forward, sideward, forward, normal" is to be introduced. The instructor, standing before the class where all can see him, calls, "Hands forward," and at the same time assumes this position. Then after a short pause, he calls, "Place," upon which all of the members of the class assume the given position. The instructor gives the class a quick survey, verifying and correcting the most flagrant mistakes in the positions taken by the students. After a few seconds devoted to this he calls, "Hands Sideward," taking the position as he gives the command, and then calls, "Place," upon which all take the new position. The positions taken are verified and corrected as before. Then in turn he continues with the third and fourth positions, assuming each as he names it. The class assumes each on the signal "place," and the instructor corrects and verifies each as it is taken.

2. *Command Method.* After the class has learned the nomenclature of the various positions in an exercise the imitation method can be dispensed with and the command method can be used. It is quite identical with the preceding method except that the instructor does not accompany the preliminary commands with a demonstration of the positions to be taken. The method of procedure in introducing the exercise given above is, briefly, as follows: "Hands

forward—Place," inspection and correction; "Hands sideward—Place," inspection and correction; and so on. In view of the fact that a demonstration is not used the instructor does not have to stand in front of the class but can introduce his exercises at any point he chooses. This facilitates instruction greatly and is thus preferable to the other method. It therefore devolves upon the instructor to familiarize the class with the nomenclature as soon as possible.

A popular variation of this method of introducing exercises consists of substituting counts for "Place," the usual command of execution. Taking the same exercise used above for our illustration, the instructor calls, "Hands forward—One," "Hands sideward—Two," "Hands forward—Three," and, "Hands normal—Four." Verification and correction is carried on here as before.

3. *Complete Command Method.* When the class has become further familiar with the nomenclature, the exercises need not be introduced in this piece-meal fashion. With a trained class, for instance, the instructor may introduce the exercise given above by calling, "Hands forward, sideward, forward and normal—by the numbers—One—Two—Three—Four," etc. Or, if it is to be carried on by a so-called continuous method, "In rhythm—Start," "In cadence—Start," or "At will—Start," would be given as the final command.

4. *Naming Method.* The naming method consists of having the exercises named; then when the instructor calls the name of an exercise and the method by which it is to be executed the class immediately performs it. To use the naming method the class, of course, must know the exercises by their names. Thus to use it the instructor, from the very beginning, should associate names with the exercises used. After complete association has been accomplished the instructor merely calls, "The Neck Presser—By the numbers—One—Two," etc., or, "The Leg Lifter—In rhythm—Start—One—Two—Three—Four," "The Expander—At will—Start," and so on.

Summary of Use of Description Method

Summarized, in introducing exercises by the description method, a new exercise is first introduced by the imitation method, then as

the class learns the exercise, successively by the command, complete command and naming methods. If the class is familiar with the nomenclature of the positions the imitation method can be disregarded. If the class learns to associate the name with the exercise quickly the complete description method may be disregarded. The whole point is that the most effective way to introduce exercises, if the class knows the exercise, is by the naming method and the instructor should bend his efforts to reach this state at the earliest possible moment. It is possible to introduce new exercises by the naming method from the very beginning, but this procedure is of doubted worth. It may make for slipshod work. It is better to teach the exercises by a more elementary method and insure good performance, and then use the naming method later.

The description method is particularly adapted to making corrections and securing good accurate work. By virtue of this fact it is well suited for classes where definite subjective results are wanted. Thus this method of introducing exercises is especially recommended for use with boys and young men's classes where attendance is compulsory and definite subjective results are of paramount importance.

Use of the Voice

Effective presentation of exercises by the description method depends a great deal on the use of the voice. "The tone of the command should be animated, distinct and of a loudness proportioned to the number under instruction and the space covered by them. Each preparatory command is pronounced in an ascending tone of voice, but always in such a manner that the command of execution is pronounced in a firm brief tone." (U. S. Army).

Or, quoting from the Connecticut Manual of Physical Training, "Pupils judge the relative importance of exercises and the teacher's interest in them by the tone in which the commands are given. A command given in the style and tone of ordinary conversation will not cause a quick response. The voice should be animated and clear and it should indicate a lively interest on the part of the teacher. Do not depend entirely on the volume and intensity of sound but strive for perfect enunciation, for better placing of the voice."

Pause Important

"The pause between the two parts of the command should be varied to avoid a rhythmical tendency and anticipation of the starting signal by the pupils. A pause of unknown length serves to promote attention and alertness."

Adapt Commands to Movements

By making the command of execution fit the exercise the instructor facilitates its proper performance. With movements which require longer periods of time for performance, such as knee bendings, chargings, and lungings or movements which, while they may be done rapidly, the instructor wants done slowly, the command for execution should be given slowly and deliberately. With movements which may be done rapidly, such as arm movement, on the other hand, the command for execution should be short and piercing. Properly handled, the command of execution may be a perfect indicator of the type of movement expected.

(b) Demonstration Method

Exercises introduced by the demonstration method are presented in their entirety. When using this method the instructor stands before the class where all can see him and says, "The next exercise is as follows." He goes through the exercise (called "setting the exercise") and then commands the class, "By the numbers—One," "In rhythm—Start," "At will—Start," and so on. In any case the class starts to work, each exerciser attempting to duplicate as nearly as possible the demonstration given by the instructor.

Many Variations

This method is used in a great variety of ways. Sometimes the demonstration is made while the class is standing "At ease," other times while they are "At tension," and not infrequently while the class is still performing one exercise. Frequently, while setting the exercise the instructor names the various positions as he takes them. Often the common errors and faults are pointed out. Sometimes the demonstration is accompanied by a brief description or explanation of it. When this is done, though, the instructor should be

particularly careful to make it brief; a lengthy description is a waste of time.

The demonstration method of presenting exercises is, of all means, the simplest and quickest. The instructor merely stands in front of the class and says, "The next exercise is as follows," demonstrates it and then starts it. To use this method, though, the instructor is more or less required to stand in front of the class for the entire drill. It is in this situation that we find the chief objection to the use of the demonstration method, the instructor cannot competently carry on individual coaching. He can aid a few students standing in the front of the class but he cannot hope to reach those in the back and on the sides. To set an exercise from in front of the class and walk through the class coaching the performers and then walk back in front to set the next exercise, does not work out satisfactorily. To use this method effectively the instructor must remain in front.

This method thus is not so well adapted for carrying on high grade, precise, definite work. It should not be used with grade school and high school classes. It is particularly well adapted for use with classes where indefinite work in large dosages is wanted. It is, therefore, best for adult groups. In classes of all ages, however, where attendance is voluntary this method is more or less necessary; the constantly changing personnel precludes the use of any other.

Make Demonstration Artistic

The demonstration of an exercise, above all things, should not be a mechanical, "cut-and-dried" exhibition. It should be alive, artistic, inspirational. Rath's observation on this point is especially pertinent. He says: "There is probably no other means, unless it be the contagious enthusiasm of an energetic instructor for his work, which will arouse as much enthusiasm for and awaken as much interest in the work in hand as a demonstration performed with elegance and polish. It is a splendid incentive. The instinct of emulation which underlies this enthusiastic response is actively aroused and spurs on the pupils to repeated efforts. No instructor can afford to ignore the wonderful force contained here. It should be utilized to its fullest extent.

"The demonstration of any exercise should be done in the spirit

of an artist, it should be model-like and perfect in every detail. The instructor (or pupil) should never permit himself to become slovenly in his execution or present work in a slip-shod fashion. It is unworthy of one who takes his work seriously. The details of an exercise should be shown with photographic clearness and the whole rounded off into a performance suggestive of consummate skill and cleverness.

"Such demonstrations give the pupils a clear and correct concept of the desired activity and make for quick results. Poor and faulty demonstrations arouse wrong conceptions, lead to faulty, sluggish and slovenly execution, and make teaching difficult and tedious; the end in view is not so readily attained, as many things must constantly be undone. First impressions are hard to eradicate and always insist on recurring."

IV. CARRYING ON EXERCISES

After an exercise has been presented and started we are faced with the problem of carrying it on. Roughly there are two methods for doing this; the so-called response method and the so-called continuous method. The command and number methods of conduct are of the former type; all the other methods are of the latter type. The feature which distinguishes the two types of work is that in the first the exercisers are given separate signals for the assumption of each successive position, while in the second, after they have been started, they continue to carry on the exercise until definitely halted.

(a) Response Work

As stated, there are two methods for carrying on response work—command and number. In the command method the successive positions are named, and on the signal for execution "Place" the several positions are taken. In the number method the successive positions are taken as the instructor calls, "One—Two—Three—Four." In both cases the intervals between signals for changing positions are irregular, varying from one second to ten seconds according to the significance of the position, the ability of the class and wishes of the instructor. The main point here, however, is that the exercisers only move in direct response to a direct signal and only make one movement at a time.

(b) Continuous Work

So-called continuous work, once it is started, is carried on until it is definitely stopped. It may be carried on without further signaling, but if we are to get uniformity of action as we do in all cases excepting at will, some signal must be used for time-marking purposes. The various members of the class normally work at different cadences so the instructor must set one for all to follow. Clapping the hands, pounding the floor with a stick and tapping the foot have all been used, though generally discarded now. Various types of instrumental music have been used with this type of work but at the present time all but the piano have been dispensed with. While the piano is used quite extensively (principally with adult classes) counting is the method most widely used.

A regular system for counting is best

Until a few years ago this vocal time-setting consisted of counting from one to eight and then from eight back to one. At present the tendency is to count from one to four or one to two and repeat —"One—Two—Three—Four—One—Two—Three—Four," and so on, for a four-count exercise and, "One—Two—One—Two—One—Two," and so on, for a two-count exercise. This is far more effective and the method which is recommended for the bulk of the work. With classes of beginners it is the only method which should be used.

Variations in time-setting procedure

After the first few lessons, however, for variety's sake other methods may be occasionally used. The instructor may count from one to eight and repeat. He may count from one to eight and then from eight back to one. He may count straight through from one to sixty or eighty, however far it might be until the completion of the exercise. He may leave out a couple of the counts; instead of counting, "One—Two—Three—Four," he may count, "One—2—Three—4—One—2—Three—4," and so on or, "One—2—3—4—One—2—3—4—" and so on.

The class always finds it interesting to know how many times they repeat a given exercise, especially one that is more or less

vigorous. Simple two-count exercises, such as knee-bending and straightening, lifting the feet and returning them to the floor while lying on the back, and similar exercises are readily counted. These two exercises, for instance, may be counted as follows: "Down One—Down—Two—Down—Three—Down—Four," and so on, and, "Up—One—Up—Two—Up—Three," and so on.

Instead of counting the instructor may substitute words indicative of direction. With the exercise "Hands sideward, forward sideward, normal" for instance, he may call, "Side—Front—Side—Down," and so on; with the exercise "Feet apart and normal" he may call, "Apart—Together—Apart—Together," and so on. Another method which is found effective is to alternate the regular counting with one of these other methods. To take the exercises outlined above for illustration the instructor would count, "One—Two—Three—Four," and, "Side—Front—Side—Down," alternately for the first, and "One—Two—Apart—Together—One—Two—Apart—Together," and so on, for the second.

If the instructor is standing where all can see him he may stop counting and keep time by gesturing with his hands, or even going through the exercise with the class. When gesturing is used it is best to conform one's movements to the movements of the exercisers; for example, in the exercise "Trunk lower and trunk normal" the hand should be waved downward with the first movement and upward with the second movement. With a well-trained class, counting and gesturing may be both occasionally omitted. On rare occasions the instructor may clap his hands in place of counting.

Another method which has been used with fair success is that of having the members of the class count in unison as they swing through the exercises. When this method is used, however, care should be taken that the class does not get out of hand. If, when using this method, the class shows a tendency to "run wild," it is best to discontinue it and proceed with the regular method.

Example of Varied Time-Setting Procedure.

Let me repeat that the bulk of the work should be carried on by counting from one to four; these other methods should be used only occasionally—three or four during a drill is ample. And when they are used it is usually best to introduce them only after the time of the exercise has been well established by the regular

One—Two—Three—Four counting. By way of example the instructor might present the exercise "Right foot raised sideward, forward, sideward and normal." On starting the exercise he would count "One—Two—Three—Four" three or four times and then substitute "Side—Front—Side—Down" for the balance of the exercise or he might (and it is not a bad idea) change back to the regular counting shortly before the exercise is discontinued. An occasional deviation not only relieves the monotony which is companion to the steady continuation of the regular counting of "One—Two—Three—Four," but if well used serves as an excellent stimulating force.

Proper Time Setting Important

Close observation of a large number of student instructors has revealed the fact that beginners have great difficulty in setting the proper times for the various exercises. If the beginning instructor works with the class, being in better physical condition and knowing the exercises thoroughly he is disposed to work faster than the ability of the class normally warrants. On the other hand, if the beginning instructor does not work with the class he has difficulty in determining the exact time desired. There is no "king's highway" to success in this matter; each individual must study and work it out for himself. Success comes more through experience than by any other means; practice seems to give the teacher a kinesthetic "feel" of the exercises which he can translate into the proper rhythms in his counting. Proper time setting, nevertheless, is extremely important and the instructor who applies his attention and efforts in acquiring the ability to handle it is making himself a master of his profession.

To give the novice a slight indication of paths which may be followed the following suggestions are made: The interval between counts varies with the size of the muscle masses involved and the size of the movement itself. In starting an exercise try to feel it yourself and count accordingly. After it has been started observe the workers and if they do not seem to be working smoothly gradually speed up or slow down the count as you feel the case requires. If the counting is very bad stop the exercise and restart it. Be sure to count with a steady regular beat; remember that exercising to irregular time is like dancing to poor music.

With Music

When music is used it is not necessary to count for the exercises, but for the purpose of setting the time properly, it is a good idea to count with it through the first two or three performances of each exercise and then when the appropriate time has been established discontinue counting. Also, toward the end of the exercise, especially one that is repeated for a considerable number of times in which the exercisers tend to lag a little, brisk counting will be found quite helpful in restimulating performance.

Procedure in the At Will Method

The at will method falls in the continuous type category—each exercise once started is carried on until definitely halted—but it presents one unusual feature, each exerciser works independently, thus obviating the necessity for marking the time. The problem of carrying on exercises by this method of conduct, therefore, is practically reduced to zero.

V. STOPPING EXERCISES

Each exercise is successively introduced, started, carried on and stopped. We have discussed the first three; we will now consider fourth, the matter of discontinuing exercises.

(a) Stopping Response Work

Exercises carried on by a response method are automatically stopped when the signals are stopped or when new signals are introduced. When working by either the command or number methods the exercisers do not move until definitely signaled to do so. To discontinue an exercise, therefore, an instructor has merely to leave out the normal signal for its continuance. On the discontinuance of the normal signal the instructor usually begins the presentation of a new exercise, or gives the class "At ease" or "At rest."

(b) Stopping Continuous Work

Work of the continuous type, on the other hand, must be definitely halted. If we wanted to discontinue the exercise with no regard for the manner in which the halting took place we would merely call, "Stop," and let the exercisers discontinue their activities as best they could. But for the sake of discipline, order and control,

we find it advisable to use some scheme whereby the exercisers halt as a unit. When exercising in rhythm the exercisers, as pointed out elsewhere, bound out of the end positions. The average individual's reaction time is not fast enough to check further movement if the signal to halt is given at the time these end positions are reached. It therefore becomes necessary to introduce a warning signal a short time before we actually wish the exercisers to stop and follow it with the signal for halting. An alternative of this consists of giving the signal to halt before we actually want it executed with an understanding on the part of the exercisers just when the work is to be discontinued.

"Class Stop" Preferred

Both of these methods are used, but for the following reasons the first is preferable. For purposes of illustration let us assume the class is performing a four-count exercise and the instructor is counting "One—Two—Three—Four." By the first method the instructor counts "One—Two—Class—Stop." In this case the signal "Class" warns the exercisers that they will be halted in the next position which they do on the signal "Stop." By the second method the instructor, without changing his rhythm, counts "One—Two—Stop—Four," substituting "Stop" for "Three." The command "Stop" given on count "Three" signals the class to halt at the next position.

Of these two methods the first is preferable because it is more in conformance with our normal training and instincts. The normal individual instinctively "puts on the brakes" when the command "Stop" is hurled at him, so if it is used some time previous to the time the act is to be executed, we have to build up an unnatural inhibition against it in order to prevent stopping in the middle of the next movement. Besides, the "Class—Stop" method conforms to our regular usage of gymnastic nomenclature and the other method does not. For these reasons—instinct, training, habit and uniformity—the first method has preference over the second.

Procedure in the At Will Method

Stopping work that is being conducted at will presents a slightly different problem. Inasmuch as the students are working independently, and thus are in all stages of performance, the possibility

of having the class stop in a unified manner is totally eliminated. The only thing that can be done is to shout, "Stop." Inasmuch as the class is wholly disunited in its working it makes no difference when this is done. On this signal the exercisers immediately discontinue the performance of the exercise and assume the attitude of "At tension."

VI. COACHING THE EXERCISERS

Introducing, carrying on and discontinuing exercises represent the barest mechanical features of teaching calisthenics. If this were the sum and substance of the teacher's responsibility the work would be comparatively simple. As it works out, though, this is only the frame upon which the real teaching procedures are built. The teacher is faced with the task of seeing to it that the exercises are properly performed. This calls for a great deal of supplementary instruction which may be conveniently divided into general and individual coaching; the first includes that instruction which is directed to the class as a whole and the second that which is given to specific individuals.

(a) General Coaching

General coaching includes that mass of instruction assumed to contain some remnant of fact applicable to all members of the class alike, given in the interest of better performance. These instructions, on occasion, may be fairly lengthy, but for most purposes it is better to have them terse and directly to the point. The instructor should center his attention on the main considerations; secondary features will in time take care of themselves or may be taken up in later lessons. This coaching is of three distinct sorts: cautionary, corrective and stimulative.

1. *Cautionary Procedures*

For good reasons the presentation of an exercise is reduced to the simplest phraseology. With many exercises, however, this is hardly sufficient to get unified, accurate execution. It is occasionally helpful to call attention to some feature of the exercise that is likely to be done incorrectly before it has been started.

By doing this we frequently can head off poor performance and confusion. Admonitions of this sort may be made in connection with the regular commands. Such admonitions make up the cautionary side of coaching.

These cautionary signals may refer to a host of things; the rhythm of the exercise, some point of the exercise to be emphasized, posture, some specific position that is likely to be taken incorrectly, and so on. Care should be taken that these directions are brief, straight to the point and separated from the rest of the command by a perceptible pause both before and after. The pause lends the caution special emphasis. In no case should more than two cautions be used and in most instances one is preferred; it is a common fault to use too many.

Illustrating how these cautions may be used we have the following samples: "Trunk lowered—(keep the back flat)—Place"; "In rhythm—(stay with the count)—Start"; "Same exercise—In rhythm—(hold the terminal positions)—Start"; "By the numbers—(keep the chest up)—One"; "Running in place"—(be sure and raise the knees)—Start"; "In rhythm—(the time is one—two—three—four)—Start."

2. *Corrective Procedures*

It is a good practice to caution the exercisers against one or two faults before an exercise is started, but in many instances it is necessary to rectify a host of them after it has been started. Adjusting these faults constitutes the corrective side of coaching. Of all the tasks tied up to calisthenic teaching no one task offers a better index of teaching skill than this. Perfection here represents mastery in teaching.

Corrective coaching gets good results when the class is working by a continuous method, but it is especially effective when used in connection with response work. During the short periods that positions are being held the instructor not only has a splendid opportunity for looking over the class, determining faults and making suggestions, but he is in position to see if his suggestions are carried out.

Corrections are directed toward three separate phases of the exerciser's work, namely, his movements, his positions and, most important of all, his posture.

Correcting Movements

The principal errors in movements have to do with the timing; the class is working too fast or too slow. Admonitions such as "Speed it up," "A little faster," "Slow it down," and so on, help in securing the proper time. Dragging out the count, "O—n—e, T—w—o," etc., helps check the speed; crisp and snappy counting helps increase it. If the instructor is in front of the class, a gesture or two may prove helpful. A combination of these procedures usually produces the desired results. If two or three efforts in this direction are not effective it is best to stop the class, call attention to the error, perhaps set the right timing, and then restart it.

Correcting Positions

The majority of corrections which the instructor is called on to make have to do with faulty positions. The procedures used in setting these right consist of gestures and short admonitions. If the instructor is in front of the class, assuming positions in an exaggerated manner will be found very effective. Otherwise, clear-cut statements such as, "Hands higher," "Bend over a little farther," "Point the toes," "Put the nose on the knees" (in trunk forward-bendings) and, "Spread the feet farther apart," usually produce results.

Posture Cues

Far more important than either or both of these are the admonitions made in the interest of getting and maintaining good posture. One of the main objectives of calisthenics is the development of good body mechanics. Merely telling the exercisers to "Stand erect" is not sufficient to secure the desired results; occasionally it is necessary to call their attention to the various elements which unite to make good posture. Besides, good posture is an active, kinetic exercise and the average class constantly tends to slump out of it unless repeatedly warned against doing so. To avoid such collapsing it is necessary to refer to the posture frequently. For this purpose a great number of cues are used.

Posture cues may be divided into four general classes, as follows:

1. *Elevation Cues*	2. *Antero-Posterior Cues*	3. *Specific Adjustment Cues*
Stand tall	Swell the chest	Weight forward
Stretch up	Shoulders back	Back flat
Body erect	Chin in	Buttocks tight
Lift the head	Chest out	Chest over toes
Chest up	Head back	Eyes up
Head up		Eyes off floor
Belly in and up		Feet pointed forward

4. *Suggestive Cues*

"Try to make the head touch the ceiling."
"Stand as if you were looking over a fence."
"Quit hunting for nickles."
"Stretch the whole body."
"You'll get dust in your eyes if you look at the floor."
"Stand tall like a soldier."

Under different conditions any and all of these cues may be used. Experience has shown, however, that in general those which refer to elevation are preferable to those which refer to antero-posterior adjustment. Elevation cues are not so likely to produce unwanted secondary effects as are those of an antero-posterior sort. "Head up," for instance, will produce nothing more than a straightened position, while "Shoulders back," in addition to bringing the shoulders back, may, and usually does, produce hyper-extension in the lower back. Yet in some cases elevation cues produce unwanted effects; shrugging the shoulders and leaning back are not uncommon. So, after all, the instructor must be on the watch to note and counter-check defective action no matter which cue is used. By common consent of those who have had considerable experience in calisthenic teaching, "Head up," "Chest up," "Buttocks tight" and "Abdomen in" are the most effective of all the cues.

3. *Stimulative Procedures*

The average class must be constantly stimulated if it is to do the best possible work. "Hold the positions more vigorously," "Move with more snap," "Get together," "Stretch up," "Lots of pep," "Don't quit" and "Let's go" are samples of useful stimu-

lative commands. The drill which does not include some admonitions of this sort is far less effective than it might be. Various situations demand different sorts of stimulation; on occasion, coaxing, chiding, congratulating, jollying, ridicule, ordering, quiet suggestion, a general bawling out all may be used. The instructor should carefully observe the mood of the class and use the means which appears to produce the best results. The well-trained class will need a less vigorous type of stimulating than an untrained class. The instructor should never use stronger methods than are necessary to secure the desired ends, but at the same time he should not fail to use strong methods when this is the only way results can be secured.

Often stimulative admonitions thrown out to the class as a whole fail to produce the desired effects. When this happens, localization usually succeeds. This may be done by calling "Back there to the right," "Up there in front," "You men, near the stairway," "You boys, in the back row," and so on. If the instructor is standing where the exercisers can see him this may be supplemented by pointing in the general direction mentioned.

(b) Individual Coaching

By our general coaching practices we cover the errors, faults and needs common to the group as a whole; but, after all, the group is made up of individuals and in spite of all our group efforts there is usually a great number of defects in the work which are purely of an individual nature. If we are to secure individual perfection, which is, or should be, the aim and end of all instruction, then individual coaching becomes necessary.

Individual coaching is one of the most important and at the same time one of the most difficult features of teaching calisthenics. To be successfully administered the instructor must exercise tactfulness, discretion and a sense of appropriateness as regards time and manner. Individuals may be coached in three ways: 1, by verbal instruction; 2, by gestural suggestion, and 3, by manual manipulation.

1. *Verbal Instruction*

To use the first of these the instructor either catches the eye of the erring member, or calls him by name, and directs him to

make the necessary correction. "Hold the hands higher," "Sit up straighter," "Keep the chest off the floor," and so on, are samples of the type of corrections offered. Admonitions of this sort should be brief and to the point.

2. *Gestural Suggestion*

To use the second means the instructor catches the eye of the exerciser working at fault and, by an exaggerated execution of the particular part of the exercise being done incorrectly, calls his attention to it. Frequently a meaningful gesture of the hand will produce the desired effect also.

3. *Manual Manipulation*

Manual manipulation is the most difficult of all the forms of individual coaching. In using it an instructor manually attempts to help an exerciser assume a position which, owing to a lack of proper neuromuscular training, he has difficulty in securing. To do this the instructor may call into use hands, elbows, knees, head, in fact, any part of his own body which may serve the purpose. The ways for manipulating the various parts into desired positions are so complicated and numerous that no attempt will be made to outline them. In some cases all that is required is a touch of the hands, in others the parts have to be forced into position. When force is used the instructor should press firmly and steadily rather than vigorously and suddenly. A sudden vigorous pressure may cause a dislocation or a strain. Also, when using this method of coaching the instructor should be particularly careful to assure the student that he is helping him, not driving him. Some individuals are easily offended by this laying-on of the hands.

4. *Methods Usually Combined*

While these three methods of carrying on individual instruction are outlined separately, in actual practice they are used in all sorts of combinations. The question, which is the best method or which combination is best, cannot be arbitrarily answered. The number and variety of exercises used, the difference in situations, and the variance in personalities of both instructors and pupils make this impractical. This work is extremely important, however, and the instructor must give it his constant study and thought if he is to

do his work most efficiently and effectively. It might be well to add that individual coaching should not be overdone. Whenever general coaching methods can be made to produce the desired results they should be used.

VII. MISCELLANEOUS PROBLEMS

The general problems of presenting exercises, conducting them and discontinuing them, totalling the principal mechanical features of calisthenic teaching, have now been covered. There are, however, a few additional problems of this phase of teaching which must be covered if our discussion is to be complete.

(a) Canceling Commands

It often happens that the instructor, after giving a directory command, discovers it is the wrong one or decides to change it. To give a new command on top of the first would be rather confusing. It is best to definitely cancel the first before giving the second. This may be done by simply calling out, "Cancel." The class is then ready to give heed to the new command without any possibilities of misunderstanding.

(b) Changing Sides

Frequently an instructor uses exercises which are executed only on one side at a time—either the right or left. For the sake of harmony all such exercises should be executed on both sides. It is best to work the opposite side immediately after the completion of the first side. How can this change be most efficiently engineered?

Response Work

The problem of changing sides of exercises of the response type is comparatively simple. Exercises carried on by the command method may be changed from one side to the other merely by changing the commands. For instance, an instructor may have commanded, "Trunk right—Place," and, "Trunk normal—Place," a dozen times; to change the side the instructor simply changes his command to, "Trunk left—Place," and, "Trunk normal—Place," and the work proceeds without delay.

Changing sides of exercises carried on by the number method is equally simple. Using the above exercise for our illustration,

let us assume that the class has been working to the right side, the instructor has been counting, "One—Two." When the class is in the normal position (reached after the count of two) the instructor says, "Other side," or, "To the left," and then, after a brief pause, follows with, "One—Two," and thus continues.

Continuous Work

Changing the direction of continuous exercises is slightly more complicated. The way least fraught with disastrous complications, certainly the most satisfactory way for beginners, is that of stopping the exercise completely and starting it over in the other direction. In doing this the instructor halts the exercisers in the usual way, then calls out, "Other side," or, "To the left," and then restarts them by calling, "In rhythm—Start," "In cadence—Start," and so on.

By another method, and one quite widely used, though not so certain in its results and consequently not so well adapted to classes where definite, clean-cut work is sought, the direction of an exercise is changed without interfering with the regular continuity of the performance. This method is neither recommended for classes of beginners nor instructors serving their novitiate. With well-trained instructors and well-trained classes, however, it may be quite effective. To change the direction of an exercise in this way the instructor substitutes signals to this effect for the last two counts of the exercise the class is performing and then without changing his time takes up the counting as before. In a two-count exercise, for instance, he would count, "One—Two—Change—Sides—One—Two—One—Two," and so on, or in a four-count exercise, "One—Two—Other—Side—One—Two—Three—Four," and so on. The principle thing to watch is the time of the counting; this should remain constant.

(c) Changing the Method

Frequently the instructor finds it desirable to have an exercise carried on by two or three different methods, perhaps the command method, number method and rhythm method. The question rises, how are these changes most efficiently engineered? The simplest procedure consists of halting the class in the starting position and then without delay indicating the new method of exercising by giv-

ing the appropriate commands, "By the numbers," "In rhythm," etc. For obvious reasons it is never necessary to say, "By command." In all cases, if no directions to the contrary are given, it is implied that the same exercise is to be performed.

(d) Recontinuing an Exercise After a Pause

Not infrequently, for a variety of reasons (to discipline a pupil, to make some explanations, to give the exercisers a moment's rest), the instructor is obliged to discontinue the performance of an exercise and then later restart the same exercise. To restart an exercise on occasions of this sort it is best, after calling the class to attention, to say, "Same exercise," and then, "In rhythm," or, "By the number," according to the method wanted. If the delay has been so long that the class may have forgotten the exercise it will be necessary, of course, to represent the exercise.

(e) Stop and Restart Classes Going Badly

Occasionally while performing an exercise a class will go into great confusion. When this happens, rather than waste a vast amount of energy in trying to reëstablish order and rather than let the class continue in disorder, it is better to stop the exercise and start anew. To stop a class on occasions of this sort there is little else to do than merely shout, "Stop." This command may be given at any time irrespective of where they are or where they should be. When all have halted, command, "At tension." Further directions may be given or the instructor may have the exercise resumed immediately by commanding, "Same exercise," etc.

(f) Resting the Class

The question arises, how often and for how long should the exercisers doing calisthenics be rested. This is of considerable importance because in the study of representative lessons made by the writer over-resting constituted one of the principal abuses in present day teaching. Most classes are rested both too often and too long. It is very apparent that most instructors have not given the matter much consideration or the prevailing conditions would not exist.

What, then, are the criteria for resting a class? Obviously we should rest the class when they are physically tired and, sub-

sequently, not in condition to do good work. Briefly there are but three conditions which warrant the discontinuance of all work. In one instance we have the condition known as nervous fatigue, in another we have what is known as muscular fatigue, and in a third we have what is known as organic fatigue. Nervous fatigue is the product of prolonged attention. It is apt to show up after a considerable period of response work, especially if accuracy is demanded, but is not likely to make its appearance during continuous work. It is only a fleeting condition, however, and in most instances a brief rest of from five to ten seconds will suffice to relieve it. Muscular fatigue, if unaccompanied by organic distress, may be ignored when new sets of muscles are used in the succeeding exercise. On the other hand, when quite severe, a brief rest, sufficient to reduce the worst symptoms, should be given. Ordinarily from five to ten seconds will do this. Organic fatigue, evidencing itself by the conditions of rapid breathing and a pounding pulse, frequently appears at the close of a particularly vigorous exercise executed by a continuous method. Response work never induces it. This condition is so serious that a brief rest is an absolute requisite. This may necessitate a rest period of from ten to twenty seconds.

The whole point is that a class should be rested when tired—but only when tired. An exerciser cannot do satisfactory work when in this condition and his body must be given an opportunity to adjust itself before further work is attempted. As soon as the worst symptoms have disappeared work should be resumed. These conditions do not arise, however, so readily as some instructors are prone to believe. With a beginning class it may be necessary to stop all work for two or three brief periods. With a trained class, one and even no rests may suffice. Rest the exercisers when they are tired but be sure they are tired and rest them no longer than absolutely necessary.

VIII. CLASS LEADERSHIP METHODS

In the broad, calisthenic drill instructors follow two general methods of procedure in carrying on their work; the first method, and incidentally the method in practically universal favor among instructors of boys' and men's classes in this country, albeit in most cases erroneously, is that of doing all of the teaching while standing before the class; the second method, unfortunately seen only on

the rarest of occasions, is that of carrying on the instruction while moving about or through the class.

(a) Standing Before the Class

The first procedure, standing before the class, is very well adapted for classes of older boys, mature men and older men when attendance is voluntary, but, contrary to general practice, it is not so well adapted for use with boys' and young men's classes where attendance is required and definite tangible results are wanted.

1. *Good for Adults*

In the first place with mature groups the calisthenic drill is chiefly significant for its hygienic value; the exercisers are primarily in need of a thorough work-out, or, as it is frequently put, "A good sweat-up." To get this they must be given hard work and plenty of it. The most effective way to secure this is by an indefinite method, preferably the rhythmic method of conduct. Under these conditions it is desirable to introduce exercises by the quickest and shortest method, which, incontrovertably, is the demonstration method. Besides, at this age men have no interest in the terminology and technique of gymnastics; they simply refuse to bother their heads with it. All of these factors tend to favor leadership from in front.

2. *Good for Volunteer Classes*

Furthermore, whether or not from the standpoint of scientific calisthenics the demonstration method is advisable, whether or not the demonstration method is necessitated by the attitude of disinterest in technique shown by the exercisers, the ever-changing personnel of these gymnasium classes due to their purely voluntary nature compels the use of the demonstration method in presenting exercises. Irregular attendance and the constant influx of new members preludes a satisfactory usage of the description method. In view of the necessity for presenting exercises by the demonstration method and the demand for a vigorous continuous program of work the instructor must stand before the class while carrying on his work.

3. *Follow-the-Leader Method*

There are two general ways of working while conducting a class from in front. According to one method the instructor uses a

set drill which he modifies only a trifle year in and year out. Usually in conducting work of this sort the instructor mounts the platform, says, "Ready—Start," starts to work himself and the class starts exercising with him. When this exercise has been carried on to his satisfaction and while the class is still performing the first exercise he gives the class a cue that the next exercise is to be started by making an exaggerated movement in the new direction, or calling out, "Next exercise," or both, and then on the proper count he calls, "Change," and immediately swings into the new exercise, the class accompanying him. In this manner, usually without a pause, the exercisers go through the entire drill. Sometimes a brief rest is given and sometimes a few breathing exercises are given, but usually the drill is made continuous. In some cases a little general coaching is done, but only rarely is there any individual coaching; it is purely a follow-the-leader, go-as-you-please performance.

4. *Individual Exercise Method*

The other method consists of setting each exercise separately while the class is at a halt. When directing a class according to this method there is a distinct tendency to pay some attention to form, posture and regularity. In setting exercises for this method of exercising there are three principal procedures followed. In one case the instructor goes through the exercise and then on the command, "Ready—Start," or, "In rhythm—Start," has the class execute it; this is the straight demonstration method. In the second case a combination of the demonstration and description methods are used. The instructor, for instance, says, "Hands on shoulders," and at the same time assumes this position. After a brief pause he commands, "Place," whereupon all take the demonstrated position. Then follows, "Hands normal," taking the position as he gives the command, and, shortly after, "Place," upon which all take the normal position. The instructor then says either, "Ready—Start," or, "In rhythm—Start," and the class starts exercising. In the other case the instructor names each exercise, gives a quick demonstration of it—sometimes giving only a gesture to indicate it—and then says, "Ready—Start," and the class proceeds.

While the statement that there are two general methods for carrying on a drill with volunteer classes is true, it might be well

to add that there are scores of variations and combinations of the same. Each instructor has a few little tricks or habits distinctly individual which are inserted here and there through the drill and thus there is modification of these general methods. There is no objection to doing this, so long as reasonable bounds are observed, but the instructor who approaches the freakish is practicing tactics which are undesirable; he is in the wrong business, he should join a circus.

(b) Moving About Through the Class

The second procedure, that of carrying on the instruction while moving about through the class, is particularly adapted for use in school and college where attendance is compulsory. In the first place with these groups the calisthenic drill is mainly significant in its educational aspect; there is some need of securing good hygienic reactions, developing suppleness, and so on, but the principal need is training in posture, training in motor control and discipline. Where these needs are paramount, accurate performance is necessary. This predicates an extensive usage of the response or definite methods in conducting the work. Under these conditions the description method of introducing exercises is the best. This method effects subjective rather than objective thinking (the exerciser thinks of himself rather than of the instructor) a condition which makes for more accurate performance.

For the purpose of teaching the nomenclature, which is essential to introducing exercises by the descriptive method, the instructor must stand in front of the class to make the proper demonstration for the first two or three lessons. These demonstrations, however, should be reduced to the minimum; the exercisers should be compelled to rely on themselves from the beginning. As long as they can lean on the instructor to do their thinking for them they will continue to do so. There is bound to be a little confusion during the transition period, but this will come any way, so it might as well come early as late. Just as soon as the instructor makes it evident that each exerciser has to depend on himself the nomenclature will be quickly learned.

1. *Procedure*

The general procedure for carrying on a class by this method of leadership is as follows: It is assumed that the class knows the

nomenclature. After the class is put in open formation the instructor stands at one edge (to the side, front or back) and gives the command for the first exercise, for instance, "Hands sideward—Place." While the class is holding this position the instructor walks slowly about, either along the edge of the class or through the lines and examines and corrects the positions taken. When he is satisfied that the majority are holding the position fairly accurately, he calls, "Hands forward—Place," giving the command from any point that he happens to be at the time. Continuing to walk about he inspects and corrects the exercisers as he sees the need and then commands, "Hands sideward—Place." The instructor continues to walk about examining and correcting the new positions. When he is satisfied with the work he calls, "Hands normal—Place."

To conduct an exercise by the number method the instructor merely substitutes the numbers, "One," "Two," "Three," etc., for the successive positions of the exercise, but otherwise works the same. To conduct an exercise by the rhythm method he indicates the exercise, calls, "In rhythm—Start" and while counting follows the same general procedure outlined above. To conduct an exercise by the at will method he names the exercise, calls, "At will—Start" and again proceeds as outlined above.

In this way the instructor carries on the work. He walks about or stands still as he wishes. As a rule, he walks rather slowly, but, walking or standing, he is constantly on the alert. While he is conducting the class the instructor, practically without cessation, coaches the exercisers. He cautions, corrects and stimulates the class as a whole and as occasion demands does the same for individuals. When speaking in the interest of class control, general coaching, and especially when presenting new exercises, the instructor faces the bulk of the class; when doing a bit of individual coaching, on the other hand, he talks simply as one individual to another, as a helper and a friend.

It seems advisable to point out that it is neither necessary nor expedient to get absolute perfection in any particular piece of work before proceeding to something else. Never hold a class in a given position longer than ten or twelve seconds. In making individual corrections do not run from one end of the class to another; correct those in your immediate vicinity and get the others later.

2. *Advantages*

The great advantage of this method of class leadership is found in the increased opportunity which the instructor has for carrying on individual coaching. In the first place, by walking through the class the instructor can examine the positions more closely, and in the second place it facilitates the work of correction. It is only by being among the exercisers that he can manually manipulate the positions taken. When working in this way a greater bond of intimacy is established between the instructor and the exerciser; the instructor is no longer a teacher he becomes a leader and a helper.

Instructors who are not familiar with this method of procedure are somewhat skeptical as to how well it lends itself to the maintenance of control and order. There seems to be a general feeling that the instructor must stand before the class and constantly sweep it with his eyes if bedlam is not to reign. From my experience and observation, control and order are far more readily maintained by this method than by standing in front of the class. With the instructor moving about through the class lazy individuals are more hesitant about cutting capers than when he is more distant. As a result all the exercisers work steadily throughout the drill.

3. *Assistant Helpful*

In conducting classes by this method of procedure I have found it extremely helpful to have an assistant (in large classes, two) walk through the class and help with the individual coaching. In order to avoid confusion any one serving in this capacity must go about his work very quietly, talking to individuals in a very low tone of voice, and at all times being careful not to interfere with the work of the head instructor. In most high school and college classes where this walking-through-the-class method of leadership is used a member of the class may be selected to serve in this way. Pupils selected for this work must have recognized leadership standing in the class and must be given a modicum of special coaching beforehand or their efforts will be disregarded or even resented. A capable assistant, though, will be found to be a great asset in the conduct of any class.

It should be pointed out that one instructor, unassisted, cannot conduct a class of more than fifty members by this method with

very satisfactory results. When the class numbers from fifty to one hundred, and even two hundred, as some classes do, it is best for the instructor to lead from in front of the class and have one or two assistants or leaders to go through the class helping individuals as they can.

(c) Exercising With the Class

The great majority of instructors who lead from in front go through the exercises with the class and a surprisingly large percentage have set convictions that it is necessary to do so. One repeatedly hears such expressions as, "The class won't work unless I do," "The harder I work the harder the class works." This state of mind is based on a misleading psychological situation. By working with the class the instructor becomes tired and perspires, and thus feels and knows the exact status of the class. When he attempts to lead the class without exercising himself he experiences no physical reactions, and consequently from his own state of being thinks that the class is not getting any. The instructor is not only wrong in his inference, but by following this line of thought he has adopted a method of procedure which is positively handicapping to the best interests of his work.

1. *Instructor Should Not Work With Class*

An exercising instructor cannot see when members are loafing, he cannot see when individuals are cutting capers; in other words, he cannot most advantageously control the class. He cannot check up on the quality of work being carried on; he cannot caution the class against mistakes, correct them or stimulate them as he should; he is too much occupied with his own performance, too completely out of breath, perhaps. In short, he is forced to forego all, or practically all, coaching. His efforts amount to this: He sets the exercise and then starts to work himself, figuratively saying as he does so, "This is the way it's done; follow me and do your best."

The energy which an instructor can spend in leading a class is limited and if he spends this in going through the exercises he has nothing left for coaching purposes. The spending of this energy through the medium of the eye, voice and gesture is much more productive of high-grade results. An instructor will get far greater returns by using his personality than by merely using his muscle.

There is no objection to an instructor working now and then for part of an exercise, or several exercises, or, if he wishes, for an entire drill, and on occasion it is wise to do so, but the practice of working through the drill day after day is not to be approved. Some instructors report that they work with the class through the entire drill because they want the exercise. This attitude is wrong because they are not employed for this purpose. They are employed to get the best possible results out of the class and if working with them interferes with getting these results they should discontinue the practice and secure their exercise elsewhere.

CHAPTER XII

CRITICAL ANALYSIS OF REPRESENTATIVE LESSONS

Like other teaching subjects calisthenics has a pedagogy. The selection of exercises, the organization of the exercises, the frequency of repetition of the various exercises, the time duration of the drill, the method of conduct, the method of leadership, the method of presentation, and so on, all represent factors which enter into efficient instruction. Rather oddly, so far as the writer can determine, no one has ever made a study of the teaching practices in this field. In the light of this fact the present study was attempted.

I. NATURE OF THE STUDY

Since a complete study would obviously require a tremendous amount of time the present investigation was limited to a few of the more outstanding elements. Specifically, it was confined to the following:

1. The selection of exercises.
2. The number of exercises used.
3. The several time factors.
4. The frequency of exercise repetitions.

These were selected because they were readily measurable; most of the other elements which enter into the teaching are largely matters of opinion and thus much more difficult to handle statistically.

A study of this sort may be either analytical or critical. Since an analytical study merely presents the material found and a critical study presents the material found and assumes to criticize and correct practices which are generally conceded to be faulty, thus making the study more valuable and worth while, it was decided to make the present study critical.

(a) Source of the Data

In the interest of this undertaking data were collected on seventy lessons given to boys' and men's classes, ten in connection with each of the main physical training units; intermediate grade school children (fourth to sixth grades), junior high school boys, senior high school boys, college men, young men (18-25), middle-aged men (26-45) and older men (46-). In view of the fact that "pure" calisthenics should not be used in the lower grades (first to third grades) this unit was not covered. Separate girls' classes were likewise not included. Of the various classes inspected the grade school classes included both boys and girls and were carried on in the schoolroom; all other classes were carried on in the gymnasium. The first four groups were school classes and, of course, attendance was compulsory. The last three groups, young men, middle-aged men and older men, were volunteer classes of business and professional men carried on in Y.M.C.A.'s and athletic clubs.

Of the lessons recorded twenty-seven were carried on in Massachusetts, nine in New York State and thirty-four in Illinois. In view of the fact that each instructor tends to carry on all of his classes in the same general manner, the observations were limited to one or two classes under any given instructor. In all, the work of forty-six instructors was recorded—twenty-four gave two drills and twenty-two gave but one. No attempt was made to observe and record the drills at any specific time of the year or season. They were recorded as opportunity afforded; in actual fact they were taken in every month of the school year excepting September. By pursuing this course truly representative conditions were insured.

(b) Method of Procedure

In collecting the data the instructor in charge was told just before the class began that some "statistics" were to be taken, but the nature of these was not revealed. If the observer had revealed the nature of the statistics, it was felt that the instructor, consciously or unconsciously, would have improved or altered his work in the evidently desirable directions, so that the results secured would not be a fair and just indication of normal work. The best course would have been to have collected the data without the

instructor's knowledge, but this was not possible in many cases, so it was decided to pursue the other course in all cases. In each instance the instructor was asked to carry on his work as usual so normal conditions could be recorded. For the purpose of checking up to see whether the lessons measured were representative or not several classes were revisited. This study showed that the work recorded represents a fair indication of actual conditions.

By using a stop watch and a set of abbreviations and codes, set up as a result of two or three preliminary observations, the worker was able to collect all the data without assistance. The number of drills recorded is too small to give us an absolutely exact index of the type of calisthenics carried on, but it does serve to give us a fairly good indication of what is being done.

(c) Data Collected

The data collected covered the following points:

Place.
Number in each class.
Description of each exercise.
Method by which each exercise was presented.
Method by which each exercise was conducted.
Number of times each exercise was repeated.
Period of time spent in opening order.
Period of time spent in resting.
Number of times each class was rested.
Total time of drill. (From closed order back to closed order.)
Total time class actually exercised.

(d) Basis for Assembling Data

The human body affords possibilities of exercise in so many ways, a host of irregularities and discrepancies face any attempt to classify them. The best that could be done was to arrange them according to the part of the body exercised, including possibly the way it was exercised (*i.e.*, neck exercise and trunk lowering exercise) and their specific type (*i.e.*, balance exercise and breathing exercise) with the understanding that a little latitude has been allowed. After considerable study twenty distinct exercise types were established. Any conceivable, useful calisthenic exercise can be logically and properly classified under one of these groups.

There was a very decided tendency to use combined exercises. In addition to using independent arm exercises the arms were used in connection with approximately three-fourths of the remaining exercises. For the purpose of showing how widely the arms were used two separate classifications have been arranged, one to show how frequently they were used independently and another to show how frequently they were used in combination.

There was also a large number of exercises of a general type used in which the trunk and the legs were both used, or the trunk was bent both sideward and backward or forward and backward, in other words, exercises which incorporated the working of two distinct regions of the body. (Some of these exercises included the use of the arms and some did not, but as the arms have been considered separately they do not enter into this situation.) When, in assembling the material, an exercise of this sort occurred, it was split into its component parts and each part entered under its respective classification. There were also a few exercises used (four to be exact) which more or less involved three or four regions of the body, exclusive of the arms. For the sake of simplicity in the records these were reduced to the two outstanding regions and charted accordingly. The total showing the number of times the various parts of the body were exercised thus shows a higher figure than the actual number of exercises used. To determine the exact number of exercises used it thus becomes necessary to subtract from this figure the number of exercises so recorded.

(e) Exercise Types Established

1. *Order Exercise.* Miscellaneous combinations of single movements given by command—steppings, marching, calisthenics, etc. Usually introduced at the beginning of the lesson to induce order and attention.

2. *Postural Arm Exercises.* Arm exercises designed to improve position of the shoulder girdle and upper back. Usually involve placing hands in various positions—sideward, upward, shoulders, neck, etc.

3. *Non-postural Arm Exercises.* Arm exercises designed to limber up the shoulder girdle and arms. Usually involve swinging, circling, shaking, etc.

4. *Trunk turning Exercises.* Exercises which involve turning or twisting the trunk.

5. *Leg raising Exercises.* All exercises in which the legs are raised (but not held) while in the standing position. Examples: Foot raised sideward, forward or backward, knee raised, etc.

6. *Balance Exercises.* All leg-raising exercises in which the raised position is held.

7. *Trunk Sideward-bending Exercises.* Exercises which involve bending the trunk laterally.

8. *Neck Exercises.* All exercises that involve bending, twisting and pressing the head in a decidedly vigorous manner. Examples: Head turning right and left, head pressing backward, head bending forward and backward and combinations of the same.

9. *Head wabbling Exercises.* All neck exercises that are not of a vigorous nature.

10. *Chest Exercises.* All exercises that raise the chest and draw the abdomen in and up.

11. *Trunk Forward-bending Exercises.* All exercises which involve bending the trunk forward (arching the back).

12. *Heavy Leg Exercises.* All of the vigorous leg exercises. Usually done slowly. Examples: Knee bendings, chargings, lungings, heel raisings and combination of the same.

13. *Useless Leg Exercises.* All leg exercises having no particular value or significance. Examples: Raising the toes, spreading and closing the feet, and so on.

14. *Foot placing Exercises.* All exercises of placing one foot a short distance from its normal position. Useful in combination with other movements, but considered alone they are comparatively useless.

15. *Trunk lowering Exercises.* All exercises which involve lowering the trunk forward. The back is held flat and the eyes are directed forward.

16. *Abdominal Exercises.* All exercises which severely activate the abdominal muscles. Exercises done in the back on floor, seat on floor, front support, back support and similar positions.

17. *Stepping Exercises.* All exercises that involve a rapid succession of foot placements and raisings. Examples: Running, hopping, skipping, dancing, etc.

TABLE IX

Frequency with Which Various Exercise Types Were Used with Different Groups

	G.S.	*J.H.S.*	*S.H.S.*	*Col.*	*Y.M.*	*M.A.M.*	*O.M.*	*Total No. of Exer. Used*	*Ave. No. of Times Exer. Used*
Order Exercise	2	4	1	0	1	0	0	8	1 in 9
Postural Arm Exercise	20	21	26	15	22	11	13	128	2 in 1
Non-postural Arm Exercise	8	10	16	16	12	19	13	94	3 in 2
Trunk turning Exercise	4	3	5	6	9	7	4	38	1 in 2
Leg raising Exercise	4	1	3	3	1	0	1	13	1 in 6
Balance Exercise	12	15	22	18	15	14	14	110	3 in 2
Trunk Sideward-bending Exercise	6	13	9	18	13	15	15	89	4 in 3
Neck Exercise	2	1	2	1	21	2	0	10	1 in 7
Head wabbling Exercise	14	14	18	11	7	4	2	70	1 in 1
Chest Exercise	0	3	1	0	0	3	0	7	1 in 10
Trunk Forward-bending Exercise	10	9	12	20	27	30	16	124	3 in 2
Heavy Leg Exercise	7	17	21	18	23	24	12	122	2 in 1
Useless Leg Exercise	3	6	8	8	5	5	2	34	1 in 2
Foot placing Exercise	0	2	3	3	0	2	3	14	1 in 5
Trunk lowering Exercise	2	2	4	4	2	2	0	16	1 in 4
Abdominal Exercise	1	6	5	9	17	26	11	75	1 in 1
Stepping Exercise	6	19	10	16	25	31	28	135	2 in 1
Breathing Exercise	13	24	28	18	23	35	20	161	5 in 2
Trunk Circumduction Exercise	0	1	3	4	4	4	3	19	1 in 4
Trunk Backward-bending Exercise	4	5	10	11	8	13	9	60	1 in 1
Total Number of Exercise Types Used (Exclusive of Arms Used in Combination)	118	176	207	193	218	249	166	1327	
Total Number of Exercises Working Two Parts (Exclusive of Arms)	9	16	23	22	27	27	18	142	2 in 1
Total Number of Exercises Used	109	160	184	171	191	222	148	1185	
Average Number of Exercises Used in Each Drill	11—	16	18+	17+	19+	22+	15—	17—	

18. *Breathing Exercises.* All exercises that involve forced respiration.

19. *Trunk Circumduction Exercises.* All exercises that involve moving the trunk successively through the forward-bending, sideward-bending, backward-bending and sideward-bending positions.

20. *Trunk Backward-bending Exercises.* All exercises that involve a backward bending of the trunk.

II. ANALYSIS OF EXERCISE TYPES USED

The data arranged to show how often the various types of exercises were used in the accompanying table (Table IX):

This table is read as follows: In a total of ten grade school classes there was a total of twenty postural arm exercises; in ten Junior High School classes there was a total of twenty-one postural arm exercises, and so on. Independent arm exercises of the postural sort were used a total of one hundred and twenty-eight times in seventy drills. They were used on an average of twice in each drill. To get the average number of times a specific type of exercise was used in any group it is only necessary to divide the number shown by ten.

This same data arranged to show how frequently the various types of exercises were used in each drill is shown in the succeeding table (Table X):

This table is read as follows: Two drills totally omitted independent arm exercises of the postural variety; twenty-nine drills had one exercise of this sort; twenty-five had two; eight had three; five had four; and one had five. There was a total of one hundred and twenty-eight arm exercises used and they were included in sixty-eight of the seventy drills.

Looking over this data from the standpoint of selection we find that there are several glaring defects in the average drills as carried on to-day.

Order Exercises

In the entire seventy drills order exercises were used in eight instances. Facings, arm exercises, trunk exercises and in one case combination exercises were used in this preliminary part of the drill. The writer feels that for the most part order exercises are

TABLE X

Number of Times Each Exercise Type Was Repeated in the Seventy Lessons

	0	1	2	3	4	5	6	7	*Total No. of Exercise Types*	*Total No. of Drills Incl. Exer. of Given Sort*
Order Exercise	63	6	1						8	7
Postural Arm Exercise	2	29	25	8	5	1			128	68
Non-postural Arm Exercise	18	18	28	4	2				94	52
Trunk-turning Exercise	38	26	6						38	32
Leg Raising Exercise	6	35	17	7	5				110	64
Balance Exercise	58	11	1						13	12
Trunk Sideward-bending Exercise	9	41	13	6	1				89	51
Neck Exercise	60	10							10	10
Head Wabbling Exercise	26	26	11	5	2				70	44
Chest Exercise	65	3	2						7	5
Trunk Forward-bending Exercise	4	31	20	9	4	2			124	66
Heavy Leg Exercise	7	29	15	13	3	3			122	63
Useless Leg Exercise	35	16	9						34	25
Foot Placing Exercise	59	8	3						14	11
Trunk Lowering Exercise	57	10	3						16	13
Abdominal Exercise	26	25	9	8	2				75	44
Stepping Exercise	5	28	16	13	5	2	1		135	65
Breathing Exercise	1	24	18	9	12	5	0	1	161	69
Trunk Circumduction Exercise	51	19							19	19
Trunk Backward-bending Exercise	19	40	7	2					60	51
Total Number									1327	

not needful nor useful. When class morale is low this procedure may be used to elevate it. The facts are, though, that a good instructor will not have a low state of morale so, in the final analysis, the order exercises used here were a waste of time.

Arm Exercises

There was a decided overusage of arm exercises. In the first place there was an overly large number of arm-flinging and hand-placing exercises of a postural sort (arm flinging sideward, upward, forward and hand placings on the shoulders, neck, and so on); approximately two in each drill. And then there was a large number of the non-postural type (exercises wherein the arms were rotated, circumducted and circled; the hands flexed, extended and shaken and the fingers clenched and extended); approximately three in each two drills. And lastly the arms were used in combination with a great number of trunk, leg and breathing exercises; approximately ten times in each drill. The following table shows most clearly the extent to which arm exercises were used:

Average number of exercises in each drill	17	Approx.
Average number of independent arm exercises in each drill (both kinds)	3	"
Average number of exercises exclusive of arm exercises	14	"
Average number of time arms used with these exercises	10	"
Average number of exercises not using arms	4	"
Average number of all exercises using arms	13	"

Of a total of 1,186 exercises used 914 involved the use of the arms; in the balance of the exercises (272) the hands were either placed on the hips or held at the sides. To put it in another way, over seventy-eight per cent of the exercises included the use of the arms, either alone or in combination.

This is all a decided fault. There is need for exercising the arms. It is good to stretch them over head, hold them sideward to force the shoulders back, and so on. In some cases, such as turning, bending and lowering the trunk, by using the arms the energy expended is magnified and thus the organic reactions are increased or the exercise is given other enhanced values. And, as a rule, the exerciser likes to use the arms in connection with other exercises; there is a certain satisfaction in swinging them about. This is all well and good, but to use the arms in four out of five exercises is overdoing it.

In the first place, excepting in special cases, there should not be more than one independent arm exercise in a lesson. Some students in this field, basing their views on the impression that all worth-while arm exercises may be combined with trunk and leg movements, are disposed to eliminate independent arm exercises altogether. To teach proper execution of these arm movements and occasionally introduce one of the less definite sort, however, it seems we are warranted in using one. But we should not use more than one. The period set aside for calisthenics at the best is brief (and should be brief), so any part of the time spent in doing arm exercises forces us to cut out other exercises of greater significance.

Secondly, we should not use the arms in combination with more than half of the other exercises. When the arms are used too much the shoulder girdle becomes fatigued and faulty work results. A very satisfactory arrangement is to use them in every other exercise; by doing this the shoulder girdle is given a reasonable amount of rest.

Trunk Turning Exercises

The proportion of trunk turning exercises was rather small—approximately one in each two drills. This relatively small proportion may be explained partially by the fact that some instructors are inclined to feel that trunk turning and trunk sideward-bending are essentially the same types of exercises and therefore to put both in is duplication. In some ways the two exercises are identical, yet each has individual qualities of enough significance and the benefits derived are so high as to warrant the inclusion of both in every drill. The only possible exception to this is in drills for

grade school children where the peculiar benefits these exercises have to offer are not particularly needed.

Leg Raising Exercises

A greater number of leg raising exercises were used than the value and significance of the same warrants. They were present in sixty-four of the seventy drills. This is quite satisfactory. The chief objection is found in the distribution. Seventeen drills included two exercises; seven, three; and five, four. If we add the balance exercises to these we have even more. Under normal conditions one leg raising exercise in a lesson should be ample. In certain instances there is no particular objection to using two leg raising exercises, or a balance exercise and a leg raising exercise, in a single lesson, but to use three or four is obviously disproportionate; there are several other types of exercise far more worth while.

Balance Exercises

Comparatively, there was only a small number of balance exercises, a total of thirteen being used in twelve drills. Balance exercises produce all of the results secured through straight leg-raising exercises plus decided postural effects. In addition, they are slightly more effective in exercising and developing the abdominal muscles. In fact, they afford such excellent training of the abdominal muscles that with grade school classes, where on-floor exercises are more or less prohibited, they may be substituted for the more vigorous abdominal exercises with splendid results. A study of the chart showing the distribution of the types of exercises by groups shows four balance exercises used in the upper grades, one in the Junior High School, three in each the Senior High School and college and one with each the young men's and older men's classes. While these exercises might be used occasionally with the first five groups, it is doubtful if they are entitled to a place in lessons for the last two groups.

Trunk Sideward-Bending Exercises

The proportion and distribution of trunk sideward-bending exercises was fair. Our total figures show an average of a little more than one in each lesson. An inspection of the data shows that, on the average, there was about one in each drill for grade

school and high school students and three in each two drills for each of the men's groups. (Owing to the fact that one drill for Junior High School students included four of these exercises the figures for this group are thrown a trifle out of balance.)

Neck Exercises and Head Wabbling Exercises

The figures covering the use of neck exercises are especially interesting. Neck exercises were used in fifty-four of the seventy drills. This makes it apparent that there is a disposition on the part of most physical instructors to use neck exercises; but in view of the fact that in only ten cases were the exercises used really worth while it is also apparent that there is a distinct lack of knowledge concerning what constitutes a good neck exercise. Eighty-five per cent of the neck exercises used were of a head-tilting, head-wabbling sort which are comparatively valueless. It is impossible to develop a so-called wrestler's neck by means of calisthenics, but by the right selection of exercises a fairly strong, healthy neck can be secured. The exercises best adapted to this purpose are of the static contraction variety and may involve the use of the hands and arms in offering resistance. An exercise of this sort may be wisely used in half of the lessons; the other sort has no justification at all.

Chest Exercises

In the entire seventy drills only seven chest exercises were used and these were concentrated in five drills. Sixty-five drills had no exercises of this sort. The sparing use of chest exercises is due, most likely, to the fact that there is only one exercise of this sort possible and it is not commonly known. Besides, the execution of this exercise calls for little movement and instructors incline toward exercises that call for movement rather than the other kind. While breathing exercises and neck exercises go a long way toward producing the special effects which may be secured through this exercise, the benefits it offers are so worth while that there is every reason for using it in half the lessons, if not more.

Trunk Forward-Bending Exercises

The figures show a good representation and, excepting in a few instances, a good distribution of trunk forward-bending exer-

cises. In the grade school, Junior High School and Senior High School classes there was about one for each drill. This is good. With the college groups and with the old men's classes there were approximately two in each drill. The excellent hygienic and backstretching values of this kind of an exercise make this double representation satisfactory. In the young men's classes and middle-aged men's classes, however, there was an average of three exercises of this type in each drill. A further inspection shows that in a few cases even four and five were used. With these groups it is not seriously out of proportion to use two and possibly three trunk forward-bending exercises in a drill, but they are decidedly overused when four or five are included. In most cases one or two of these exercises is sufficient to the needs.

Heavy Leg Exercises, Worthless Leg Exercises, Foot Placings

In charting the leg exercises it was deemed advisable to establish three divisions; first, the vigorous exercises which include knee bendings, chargings, lungings and heel raisings; second, the essentially worthless exercises, such as toe raisings and feet spreadings; and third, the foot placings which can hardly be considered as vigorous, but at the same time cannot be considered as useless. These latter are quite useful in changing the base for many exercises and from many standpoints may be considered as desirable.

An inspection of the data shows that there was a good representation and, excepting in a few cases, a good distribution of the vigorous leg exercises. The majority of drills used one, two or three of them, seven used none, three used four and three used five. Every drill should include at least one exercise of this sort, and with adult groups two or three is not amiss, but four or five seems to be a few too many.

In the seventy drills, thirty-four essentially useless leg exercises found place. These exercises of raising on the heels and spreading the toes were in every case done independently; the time spent doing them was wasted.

Fourteen foot placings were used. In view of the fact that these were all done in connection with other exercises this does not merit criticism one way or another. It would be a distinct waste of time, however, to use exercises of this sort independently.

Trunk Lowering Exercises

Trunk lowering exercises were used comparatively little. Of the entire group of seventy drills there were only thirteen which included them; in ten drills one was used, in three drills two were used. This is, perhaps, the greatest defect found in the selection of exercises. The postural, motor control and hygienic effect of this species of exercise is so splendid that there should be at least one in each drill from the Junior High School clear through maturity and old age.

Abdominal Exercises

The figures covering abdominal exercises are a revelation. In the grade school classes only one drill included an abdominal exercise. In the high school and college classes they were present in approximately every other drill. In the young men's classes and old men's classes practically every drill included one of these exercises. In the middle-aged men's classes, however, two, three or four were present in every drill. The rarity of abdominal exercises in grade school classes is due partially to the fact that the children exercise in their street clothes and the teacher does not want to get them dirty. Another cause for the comparative infrequency with which these exercises are used in the grades and in high school and college is the general lack of appreciation of their postural significance. Abdominal exercises are looked upon as mainly hygienic in value, but as the need for hygienic exercises during boyhood and youth is relatively small, they are not used much with classes in this period of life. Another reason for the small use of this type of abdominal exercise is the use of leg raisings as an abdominal exercise.

The use of trunk forward-bending as an abdominal exercise further accounts for the limited number of these exercises. For some reason a great number of physical instructors have the impression that trunk forward-bending is an abdominal exercise. They reason the matter out as follows: In this exercise the abdominal contents are squeezed together and massaged and it thus becomes an abdominal exercise. This is totally wrong. An abdominal exercise implies an exercising of the abdominal muscles. This does not take place in the above exercise. The trunk is

lowered by force of gravity and raised by the combined action of the erector spinæ and the posterior hip muscles; the abdominal muscles are barely thrown into action.

Some instructors likewise have the impression that trunk backward-bending is a good abdominal exercise. This exercise does call the abdominal muscles into active play, but it has other features so undesirable that it should not be regularly used.

In the order of their importance the desirable abdominal exercises to be used in calisthenics are as follows: Lifting the trunk and legs while in the back-on-floor position; exercises carried on while reclining in the seat-on-floor, front support, back support and side support positions; the various methods of raising one leg while standing on the other; and the trunk sideward bendings. The abdominal muscles are worked, of course, in other exercises, but it is in these that they are used in a large way.

Stepping Exercises

With the exception of the grade school classes, stepping exercises were well represented in the great majority of drills. In the grade school group they were present in exactly five classes. (In one class two were used, so our total shows six.) The relative infrequency of their use in these classes is explained by the fact that the classes inspected were carried on in the schoolroom. Stepping exercises, as personal inquiry revealed, were excluded in many cases because of the noise which accompanied their practice and the disturbance which they created in other rooms. In the high school and college classes there was an average of a little more than one exercise of this variety in each drill. (The figure for the Junior High School group, unquestionably, does not represent the actual normal situation. There were two cases in which three exercises and one case in which four exercises were used. This tends to throw these statistics out of balance.) In the men's groups there were approximately three stepping exercises in each drill. The capital hygienic value of this type of work, combined with the fact that it is a comparatively pleasant form of exercise, accounts for this rather extensive use of these exercises with these classes.

Breathing Exercises

While the figures covering breathing exercises show that there was, on the average, five breathing exercises in each two drills, in

actual fact, as the second chart shows, there was a great variance in their usage. In one instance none was included and in one instance seven were included. A medium between these two extremes would be more satisfactory. Every drill should include at least one, and two would not be amiss, but to use four, five and six as some did is far too many.

It is a very common practice among physical instructors to have the exercisers hold their breath over comparatively long periods of time while executing breathing exercises. Inquiry of several leading instructors as to why this is done has abduced no logical reason other than that boys and men like to swell up their chest to the fullest degree and hold it so. The act is accompanied by a feeling of elation, power and vitality that gives the exercisers considerable satisfaction. This practice seems to be more of an inherited custom than anything else; early physical instructors did it and the present generation have merely followed in their footsteps.

Investigating the act from the physiological standpoint, however, we find that there is no justification for the practice. On the contrary, everything indicates that this should not be done. Forced inspiration calls into play the remoter lung areas, washing them and keeping them in a healthy tomic condition. Working over larger surfaces in this way the process of purifying the blood, *i.e.,* removing carbon-dioxide, is greatly facilitated. This is good. The holding of the breath, on the other hand, has a counter effect; carbon-dioxide accumulates in the blood stream exactly as smoke accumulates in the chimney of an oil lamp when the top is covered. In the face of this fact the practice of holding the breath during breathing exercises is to be discouraged. Holding the breath for four or five seconds may not be particularly objectionable, but for general purposes a steady rhythmical inhaling and exhaling is preferred.

Trunk Circumduction Exercises

The trunk circumduction exercise was used a total of nineteen times in nineteen drills; it was never used twice in the same drill. An investigation of our first chart shows that it was not used at all in the grade school and used only once in the junior high school, but in the other groups it was present three or four times in each.

It might be left out of the junior and senior high school lessons altogether and used only in the mature groups; the large hygienic significance of this exercise makes its use worth while with these latter groups, but of questioned value for classes made up of younger people.

Trunk Backward-Bending Exercises

Trunk backward-bending exercises were used in fifty-one of the seventy drills, seventy-three per cent. Forty drills included one, seven included two and two included three. These figures reveal a large overusage of this form of exercise. This wide usage is undoubtedly a direct inheritance of the old exercise-every-joint-in-every-direction theory of gymnastics. The untrained physical instructor (and a surprisingly large number of trained ones, too) notes that the trunk may be bent backward, as well as forward and sideward, and proceeds to bend in this direction. The thesis that backward-bending of the trunk is a desirable abdominal exercise is responsible for a small usage also. As elsewhere pointed out, this is a mistake and should be avoided. A backward-bending exercise may be useful in exercising the abdominal muscles, but the effects of this exercise on the lumbar back are so pernicious that it should be used only occasionally.

III. ANALYSIS OF THE NUMBER OF EXERCISES USED

The wide variation in the number of exercises used in the different drills is also quite interesting. This distribution is shown in the following table (Table XI):

TABLE XI

Number of Exercises Used in Each of the Seventy Drills

											Total	*Average*
Upper Grades	6,	8,	9,	10,	11,	12,	12,	12,	12,	15	109	11
Junior High School...	8,	10,	13,	14,	17,	17,	17,	18,	21,	25	160	16
Senior High School...	10,	15,	16,	18,	18,	19,	19,	20,	23,	24	184	18
College	10,	12,	14,	17,	18,	19,	19,	19,	21,	22	171	17
Young Men	15,	17,	18,	18,	18,	18,	18,	19,	22,	26	191	19
Middle-aged Men	14,	17,	19,	20,	22,	22,	23,	25,	28,	32	22	22
Older Men	11,	12,	13,	14,	14,	15,	16,	16,	17,	20	148	15

A review of the above table shows that the smallest number of exercises used was six in one of the upper grade school lessons, the largest number was thirty-two in one of the middle-aged men's

classes. Within each group there was a wide difference in the number of exercises used; in all cases the drill having the largest number had from two to three times as many as the drill having the smallest number. The observer asked a number of instructors why they used the particular number of exercises which they did. The usual reply was either "I have fifteen (or twenty or twenty-five) minutes for the work and I give them exercises until the time is up," or, "I work the class until I feel they have had enough and then I quit." In a few cases the instructors followed a set drill and in one case the instructor said, "I work the class until I run out of exercises." It was quite evident that in the great majority of cases, if not all, the instructor followed no scientific procedure and the work was largely a matter of filling in time and using a flock of exercises.

It is generally recognized by specialists in this field that from ten to fourteen good exercises, correctly and vigorously executed from ten to fifteen times each, is about the proper dosage for all groups, grade-school classes and middle-aged men's classes, perhaps, being excepted. From eight to ten exercises, carried on from six to ten times, is the proper dosage for the intermediate grades. And from sixteen to twenty good exercises, carried on from ten to twenty times, is a satisfactory dosage for middle-aged men.

According to these standards our records show a decided fault in the number of exercises used. In actual fact, of the entire seventy drills, forty-nine exceed the maximum number. Or to put it a little more concretely, seven of every ten drills used was made up of an excessive number of exercises. The number of drills in each group which, according to our standards, were too long, are as follows:

Intermediate grades	— six
Junior High School	— six
Senior High School	— nine
College	— seven
Young men	— ten
Middle-aged men	— six
Older men	— five

IV. ANALYSIS OF TIME FACTORS

Our records show a similar wide variation in the amount of time devoted to calisthenics. The period of time used for this

work in each drill is shown on the following table. (It should be explained that this includes the time elapsing from the original closed formation back to the closed formation. This includes, counting off, opening ranks, executing the exercises, resting and closing ranks (Table XII):

TABLE XII

Time Spent (in Minutes and Seconds) for Each Drill

Inter. Grades	6-35	6-45	8-45	8-45	9-30	9-55
Junior High	8-10	8-50	10-40	12-20	14-05	15-25
Senior High	10-35	12-05	12-15	15-00	16-55	17-45
College	10-05	14-50	16-55	17-40	19-05	19-10
Young Men	15-50	17-10	17-10	17-30	17-45	19-20
Middle-aged Men	17-20	18-45	20-30	22-00	23-40	24-55
Older Men	11-15	12-40	14-05	15-10	16-30	17-00

					Average
Inter. Grades	10-05	10-40	11-25	12-40	9-31
Junior High	18-15	18-15	19-25	21-00	14-38
Senior High	18-40	18-45	23-20	24-10	16-57
College	19-25	20-20	21-35	25-15	18-41
Young Men	20-40	20-30	20-35	21-25	18-41
Middle-aged Men	24-25	25-40	26-25	27-30	23-02
Older Men	19-15	19-20	19-30	20-00	16-28

The shortest drill from the standpoint of time elapsed is thus seen to have occurred with one of the upper grades lessons and the longest with one of the classes for middle-aged men. The former had a duration of six minutes and thirty-five seconds; the latter had a duration of twenty-seven minutes and thirty seconds.

It is commonly agreed by those who have made special study in this field that the periods of time given in the following chart are most satisfactory for the various groups.

Intermediate Grade School	— 5 to 7 min.
Junior High School	— 10 to 12 min.
Senior High School	— 12 to 15 min.
College	— 12 to 16 min.
Young Men	— 12 to 18 min.
Middle-aged Men	— 15 to 20 min.
Older Men	— 10 to 15 min.

If more than the maximum is used, time has been stolen from the practice of other activities. A study of the above table shows that a total of forty-nine drills exceeded the maximum time limit. On the average two of each three drills were longer in time consumed than they should be. The distribution of drills showing an excessive expenditure is as follows.

Intermediate Grades	— eight
Junior High School	— seven
Senior High School	— six
College	— eight
Young Men	— five
Middle-aged Men	— eight
Older Men	— seven

It thus becomes evident that excessive time expenditure is not confined to any particular group. It is more or less evenly distributed through all groups.

Far more interesting and illuminating than any of the other data collected, however, is that which shows the time efficiency of the work. This is outlined in the following table: (Table XIII)

TABLE XIII

Time Efficiency (in minutes and seconds) of the Work

	I.G.	J.H.S.	S.H.S.	Col.
Average length of time devoted to each drill..	9-31	14-38	16-57	18-32
Average length of time class actually exercised	3-15	5-49	6-02	6-54
Average length of time class was not exercising	6-15	8-49	10-55	11-38
Percentage of total time average class actually worked	34%	33%	35%	37%
Percentage of total time average class was not exercising	66%	67%	65%	63%

	Y.M.	M.A.M.	O.M.	Average for all groups
Average length of time devoted to each drill..	18-41	23-02	16-28	16-50
Average length of time class actually exercised	9-18	12-12	7-35	7-17
Average length of time class was not exercising	9-23	10-50	8-53	9-33
Percentage of total time average class actually worked	50%	53%	46%	43%
Percentage of total time average class was not exercising	50%	47%	54%	57%

In reading the above table the top row of figures represents the total time given over to the calisthenic work. It includes the time elapsing from the original closed order formation back to this formation. In the case of the intermediate grade classes it includes the time from the moment the teacher instructed the class to leave their seats until they had been reseated.

The second row represents the average total time each class in the designated group was actually engaged in performing exercises (executing movements and holding position).

The third row represents the average total time each class in the designated group was not exercising. This includes time devoted to opening and closing order, explaining and demonstrating exercises, making announcements, disciplining pupils, resting, and "just doing nothing."

The fourth and fifth rows cover the data revealed in the second and third rows, respectively, in percentages.

The figure showing the proportionate amount of time the average class was actually exercising are extremely significant. The instructor usually talks of his calisthenics in terms of a ten, fifteen, or twenty minute drill and everyone, instructor, exerciser and spectator alike, believes that this represents the time actually spent in exercising. Our data, however, indicates that this is not true. According to our figures the average class actually exercises a trifle more than two-fifths of the time. They reveal a very low degree of efficiency in calisthenic teaching.

The relative efficiency of the school groups and the non-school groups is quite striking. Roughly, the first four groups exercised one-third of the time and the last three groups exercised one-half of the time. The latter show fifteen percent greater time efficiency than the former. This difference is due to a variety of reasons. The chief reason perhaps is the difference in the nature of the classes. In school, attendance is compulsory and the instructor has no incentive for doing efficient work other than his own conscience. In the Y.M.C.A. and athletic clubs, attendance is voluntary and the instructor has to "sell his work" to hold the classes. Too many school instructors look on calisthenics as a "time filler." The method of presentation used in the two cases is another factor. In school it is a common practice to halt the class while demonstrating a new exercise. With volunteer men's classes a new exercise is fre-

quently demonstrated while the class is still executing one. With the school classes, too, some time was spent in securing and holding order; no time was spent in these procedures with the men's classes.

Experiments carried on with university classes show that under efficient management and with normal conditions a class should work (actually exercise) three-fourths of the time they are on the floor for exercising. If this represents efficiency, it is quite evident from the above figures that a great deal of time is wasted in the conduct of this work. How is this time wasted?

(a) *Opening Order.* In the first place, too much time was spent in opening order. This is especially true with school classes where anywhere from a minute and a half to four minutes was spent in taking the open formation. In most cases the procedures used were an extravagant waste of time; discipline was bad, the instructor's directions were hazy and indefinite, and a great deal of time was spent in dressing lines. Efficiently handled, a class of forty or fifty members may be placed in open order in less than half a minute; any time beyond a minute is absolute profligacy.

The average amount of time spent in placing each class in each group in an open formation is shown by the following table:

TABLE XIII

Average Period of Time Spent by Each Class in Opening Ranks

Intermediate Grades	48s.	Young Men	1m. 42s.
Junior High School.....	2m. 01s.	Middle-aged Men	1m. 21s.
Senior High School.....	1m. 50s.	Old Men	1m. 16s.
College	1m. 57s.	Average for all groups....	1m. 33s.

(b) Resting. Secondly, too much time was spent in resting the class. Some instructors rested their classes too frequently, others rested them too long, and a number did both. For the purpose of relieving nervous strain, muscular fatigue, and organic distress, it is advisable, as these conditions arise, to give the class a rest; but to rest the class after each exercise, or for more than a minute at a time, as some instructors did, is overdoing things. Three or four rests in a lesson is ample. From four to eight seconds will relieve nervous fatigue and from eight to twenty seconds will relieve muscular fatigue or organic distress. Rests given under any other conditions are wasteful of both the teacher's and pupils' time.

The average amount of time spent by each class in each group in resting is shown by the following table. (Table XIV.)

TABLE XIV

Average Period of Time Spent by Each Class Resting

Intermediate Grades	1m. 57s.	Young Men	3m. 12s.
Junior High School	3m. 48s.	Middle-aged Men	3m. 05s.
Senior High School	4m. 13s.	Old Men	3m. 26s.
College	4m. 00s.	Average for all groups	3m. 23s.

The frequency with which resting periods were used is shown by the following table. (Table XV.)

TABLE XV

Average Number of Rests Used in Each Drill

Intermediate Grades	7—	Young Men	8+
Junior High School	8+	Middle-aged Men	7+
Senior High School	10+	Old Men	5+
College	9+		

These two items (opening order and resting) account for about half of the time during which the average class was not actually engaged in exercising. The balance of this time is accounted for in closing order, demonstrating and explaining exercises gaining class control and making announcements.

V. ANALYSIS OF THE EXERCISE REPETITION FACTOR

A study of the frequency with which the exercises were repeated brings to light some interesting facts. The data arranged to show the average number of times different types of exercises were repeated with the various groups is shown in the following table. (Table XVI.)

In assembling this data bilateral exercises were considered as single units; that is, if the trunk was bent to the right four times, then to the left four times, and then to the left and right alternately two times each, the exercise was considered to have been repeated six times. Three features are disclosed by this study.

First, the relatively small number of times the exercises were

TABLE XIV

	G.S.	*J.H.S.*	*S.H.S.*	*Col.*	*Y.M.*	*M.A.M.*	*O.M.*	*Aver. for All Groups*
Independent Arm Exercise (Postural)	6	8	7	6	7	8	6	7
Independent Arm Exercise (Non-postural)	7	6	6	9	9	9	7	7
Trunk Turning Exercise	6	7	10	8	11	8	8	8
Leg Raising Exercise	6	6	8	8	8	10	8	8
Balance Exercise	4	3	6	3	5		2	4
Trunk Sideward-bending Exercise	7	7	6	8	8	10	7	8
Neck Exercise	5	8	4	6	6	5		6
Head-wabbling Exercise	6	6	6	7	8	9	8	7
Chest Exercise		6	5			9		7
Trunk Forward-bending Exercise	6	7	7	6	10	10	9	8
Leg Exercise	6	8	8	13	9	12	8	9
Leg Exercise (Useless)	8	9	10	9	9	8	8	8
Foot-placing Exercise	0	6	7	7	9	9	8	8
Trunk Lowering Exercise	5	7	8	6	8	7		7
Abdominal Exercise	8	7	9	9	9	9	6	8
Stepping Exercise	12	16	11	22	15	20	17	16
Breathing Exercise	4	7	5	4	6	5	4	4
Trunk Circumducting Exercise	0	8	7	8	9	7	7	8
Trunk Backward-bending Exercise	5	6	7	9	9	10	8	8
Average	6	7	7	8	8	9	7	8

repeated. Most instructors are under the impression that exercises are repeated far more often than they are. It is true that now and then an exercise (exclusive of running exercises) was repeated fifteen, twenty, and twenty-five times, but for the most part they were repeated four, six, and eight times. Two-count exercises as a rule, were repeated more often than exercises with a longer count. Bilateral exercises which usually take at least four counts and frequently eight, however, are an exception. Due to the fact that exercises of this sort are very frequently done to the left, then the right, and then alternately the total number of times they are repeated is increased.

Second, the tendency to repeat exercises which have a preeminent hygienic value more often than other types. It will be noted that the trunk bending exercises, the abdominal exercises, the heavy leg exercises and the stepping exercises are repeated more often than are the independent arm exercises, the balance exercises, the neck and chest exercises, or the breathing exercises.

Third, the tendency to repeat exercises more often as the age of the group increases until in the older men's group when the number drops off considerably. In the grade school the average exercise was carried on six times, in middle aged men's classes nine times, and in older men's classes seven times.

These figures disclose what is, from the writer's study, a decided fault in the teaching of calisthenics. The exercises are not repeated with adequate frequency. Instead of carrying on an exercise four, six, or eight times it would be better to repeat the general run of exercises from eight to fifteen times. Exercises carried on to response only, of course, cannot be carried on so frequently and the exact number of times an exercise should be repeated varies with the age of the class, their condition, and so on, but all in all, most exercises could be carried on approximately twice as long as they are at present. The calisthenic drill is executed for the purpose of getting vigorous organic reactions, developing posture, and so on. The more vigorously we work the body, up to a certain point, the greater the organic reactions; the more severely we exercise the muscles actively interested in creating good posture, up to a certain point, the more likely we are to develop good posture. Whichever way we look at it, the exercises should be carried on for comparatively long periods of time.

There is altogether too much coddling of gymnasium classes. Too many instructors curry popularity through giving the exercisers an easy work-out; too few curry it through serious effort. Too many prefer being good fellows; too few good instructors. Physical education is too often neglected for the sake of physical recreation. Classes come into the gymnasium for physical exercise; the instructor should see that they get it—bountifully. The average group takes calisthenics two or three times a week for periods of ten, twelve or fifteen minutes; they can well stand a vigorous program for these few brief periods. Modern life is too replete with soft chairs, heated homes and electric push buttons; there should be more cultivation of the Spartan attitude. The calisthenic lesson affords one opportunity for the training of this spirit. Let us use it.

An exercise of course should not be carried on beyond the point of fatigue but this point is not so easily reached as one is ready to believe from the look-of-pain on some of the exercisers' faces. Nor should it be carried on after the exercisers have lost form, but by the proper amount of stimulation and correction this may be considerably delayed. When form has been lost there is no reason why the exercisers cannot be given a momentary rest and then the same exercise repeated.

VI. ADDITIONAL FAULTS

While the facts listed above cover practically all of the matters upon which actual data was collected the study revealed a number of other conditions which are equally as surprising and shameful. The physical instructors investigated were almost in total ignorance of what constituted good calisthenics. One used exercises he "learned in the army"; another "made them up as he went along"; another "used the same exercises he had been given in college"; and another "got his exercises from a Y.M.C.A. physical director." In practically every case the instructor himself had very little conception of what constituted good exercises.

Similarly there was a general lack of knowledge of good teaching principles. The methods of introducing, carrying on and stopping exercises was little short of awful. There was practically no coaching of the exercises. For the most part it was mainly a case of setting the exercise, starting it, and then go as you please. Most

instructors carried on the same work with all classes. And strangest of all, the teaching of the trained instructors was in many cases but slightly superior to that of the untrained. This is presumably due to the fact that in most of the normal courses in physical education very little attention is paid to calisthenics. Under conditions such as these one can understand why there is so much complaint and dissatisfaction with calisthenics.

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